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PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

ESTABLISHED IN 1872

Vol. LXXV. No. 12 NEW YORK AND CHICAGO, SEPTEMBER 21, 1922

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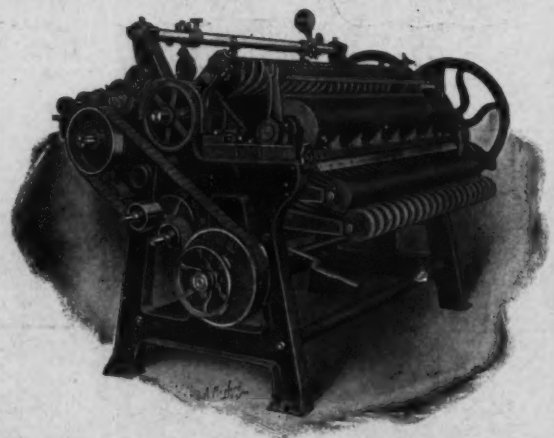
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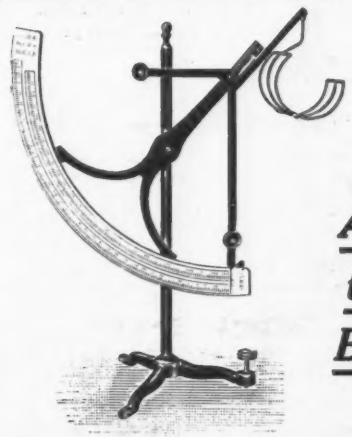

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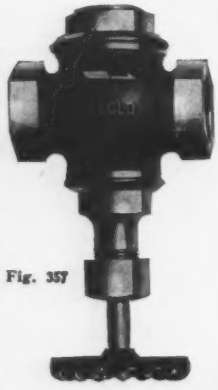

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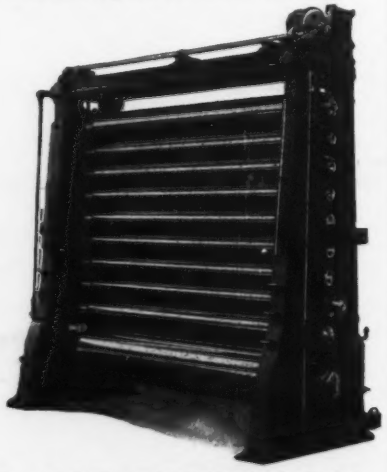

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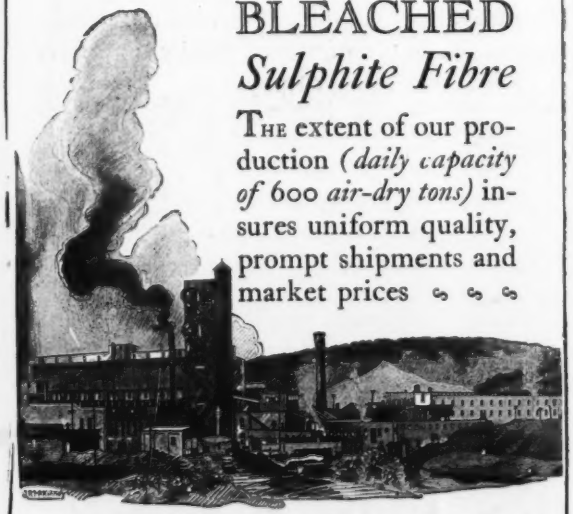

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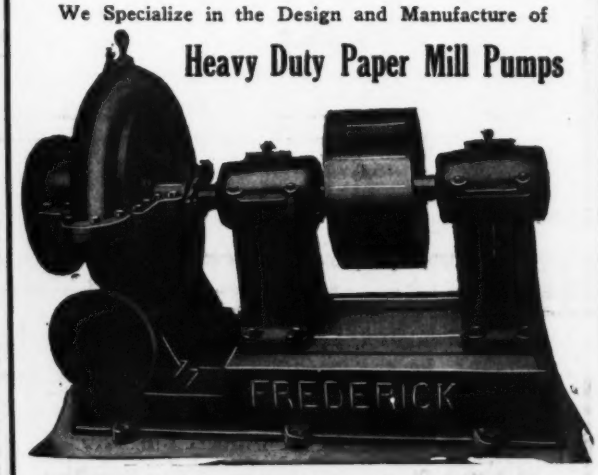

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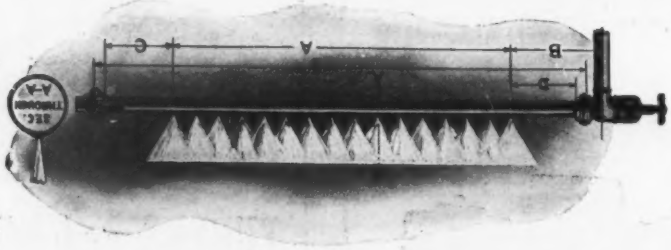

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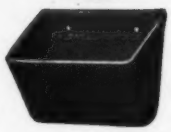

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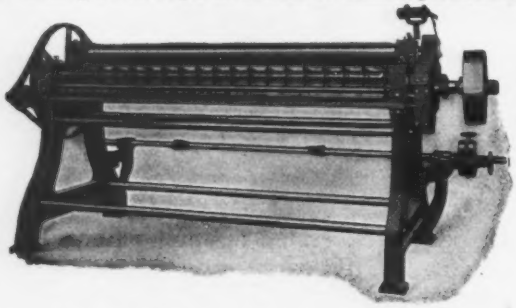

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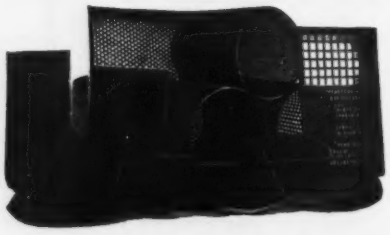

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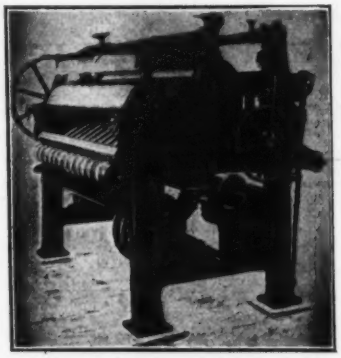

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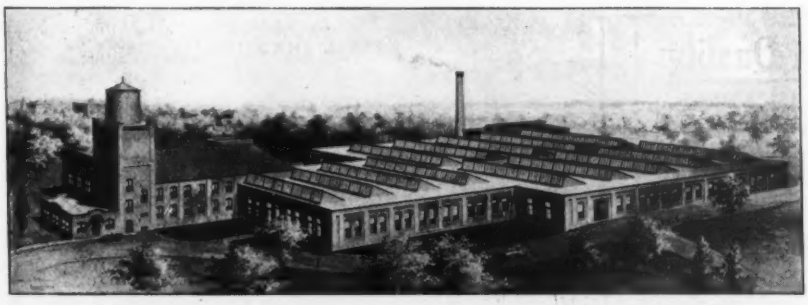

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Western Publication Office—431 S. Dearborn Street, Chicago
New England Office—Room 46, 127 Federal Street, Boston
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XUM

BRYANT PAPER CO. TO ASK BOND ISSUE OF $5,000,000

Stockholders at Meeting to Be Held September 26 Will Be Asked to Indorse Program Which Will Result in a Modern Plant Including Every Economy of Tested Merit Known in the Power and Paper Industry and Require an Outlay of $3,500,000—Easing Up in the Local Situation Leads to Belief That Michigan Paper and Pulp Mills Will Be Able to Avoid Suspensions.

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., September 18, 1292.—Contemplating the greatest campaign of improvements and expansion, yet undertaken by that concern, the officers and directors of the Bryant Paper company are asking the stockholders to authorize a bond issue of $5,000,000, at a meeting called for Tuesday, September 26.

Provision is made for two programs, which when completed will result in a modern plant, including every economy of tested merit known in the power and paper industry at this time. These provide for the expenditure of $3,500,000, and will extend over a period of two to three years before finally completed.

Program A follows:

(1) The construction of a new power plant, including four boilers, to take the place of four boiler houses, containing 24 boilers.

(2) The remodelling of the machinery and equipment at the Superior division to increase production and reduce costs.

(3) The installation of a central machine shop and supply department, to include also a salvage plant for reclaiming and repairing supplies.

The cost of this program is approximately $1,500,000 and is covered by Series "A" or the present bond issue.

After the completion of Program "A," when the earnings and savings have been proven, it is intended to proceed with the proposed improvements in the Bryant and Milham divisions, for which will be required approximately $2,000,000.

For $5,000,000 Bond Issue

"In arranging for this financing, we are asking the stockholders to authorize a $5,000,000 bond issue to cover these two programs to the amount of $3,500,000," said Felix Pagenstecher, president of the Bryant Paper company, in way of explanation. "The balance, or $1,500,000 to be issued only if an occasion should present itself. There is no apparent need for this additional amount at this time, but as there is no expense attached to making arrangements for the full amount, it is considered desirable to do so."

This vast construction and expansion plan is the outgrowth of an exhaustive survey of the properties of the Bryant Paper company, requiring nearly a year's time, and conducted by V. D. Simons, of Chicago, and his corps of assistants. Mr. Simons is an engineer of acknowledged reputation and wide experience in the paper industry, who has examples of his ability in successful operation.

In his statement to the company's stockholders, President Pagenstecher says: "Mr. Simons' figures show us that the possible return on the investment is so attractive, and the economies so great, that your directors unanimously recommend that we proceed with the improvements."

The survey comprises several hundred pages of manuscript, diagrams and plans. Every detail has been worked out to the minutest degree.

"The new central power plant proposed would replace the four power plants now required to operate the Bryant, Superior and Imperial divisions," said Mr. Pagenstecher. "Four boilers of the modern type will do the work now required of 24 boilers and at a wonderful saving in fuel costs and operation.

"Our power plant at the Milham division, a comparatively new one and equipped with ten boilers, will continue to operate as at present.

To Re-equip Various Mills

"The plan providing for re-equipment of our various paper mills, starts with the Superior. While I am not in a position to make public at this time just what is to be done, it will include the rebuilding of the paper machines, the addition of new drives and a large amount of new equipment. In this connection I do not care to go into figures or predict definite results, but Mr. Simons has been able to convince us that the improvements at the Superior division will give us 50 per cent greater production in that mill, with a better product of paper and at reduced costs.

"What applies to the Superior division, also pertains to the Bryant and Milham divisions. They will in turn be improved and re-equipped in similar manner, insuring an enormous increase in our output, with a like reduction in costs.

"The completion of the two programs will give us a modern plant throughout and at a cost far less than if we started in to build new mills from the ground up. All our buildings are in fine condition and in addition were erected at a period when costs of construction were only a fraction what they are today. It will cost very little to bring them up to date in every way. By rebuilding our present machinery we are also able to make the fullest use of all material at hand, again effecting a big saving."

Mr. Pagenstecher said that no contracts for work to be done have as yet been awarded and none will be until after the stockholders authorize such action.

Notices of the special meeting were mailed out Tuesday.

Kalamazoo Vegetable Parchment Welfare Work

The most elaborate, far-reaching and comprehensive system of social welfare work as yet undertaken by any industrial concern in Southwestern Michigan will be inaugurated this Winter by the Kalamazoo Vegetable Parchment Company and the residents of Parchment community.

It is the development of plans long encouraged and worked out by Jacob Kindleberger, president of the Kalamazoo Vegetable Parchment Company, and made possible through the completion of the community's beautiful community house and the stimulated interest and co-operation of practically every resident of the suburb.

To assist in the work in the future, Mr. Kindleberger has brought to Parchment Edward S. Gilfillan, a well-known social worker from Portsmouth, Ohio, who will have charge of carrying into effect the plans and methods favored.

Mr. Gilfillan has been on the ground long enough to acquire knowledge of the duties required of him and the possibilites of the good that can be accomplished. As he says, "I am but a cog in the wheel of a splendid system and will merely do as directed, thus relieving Mr. Kindleberger of the countless burdens of detail."

Easing Up in Coal Situation

A general easing up in the coal situation, with the belief that local concerns, including paper mills, will be able to get by without suspension, is the statement issued this morning by E. M. Sergeant, Kalamazoo County fuel administrator.

Mr. Sergeant adds there is considerable Illinois and Indiana coal available, also meager supplies from Kentucky. The price now is about $5.00 a ton at the mines, as against $9.00 a ton three to four weeks ago.

"The state is getting some Kentucky coal," said Mr. Sergeant. "I would say about ten cars a day. This is being distributed about gingerly. Anyone in need of Kentucky coal, can make application to my office and I can probably secure a supply for immediate requirements.

XUM

"Local paper mills have been forced to buy a lot of high priced coal to keep going and none of the local mills are long on fuel at this time. Care must be used in the consumption of fuel, for while the outlook is better, conditions are still far from satisfactory."

Mr. Sergeant says no Eastern coal is coming into Kalamazoo and that in all likelihood there will be no West Virginia coal available until after the close of navigation on the great lakes, or December 1.

"Continuance of the railroad strike will complicate matters," said Mr. Sergeant. "The car supply is still far short of requirements. Reports on my desk this morning regarding the car supply show the Cheasapeake & Ohio, 24 per cent, Louisvillle & Nashville, 19 per cent, Norfolk & Western, 50 per cent. When the strike ended there were plenty of coal cars at the Illinois and Indiana mines, but these have been loaded and forwarded and few have been returned to take their place."

Reduction in Waste Paper Rates

Effective November 1, 1922, the rates on scrap paper from Eastern points origin to Kalamazoo will be reduced 10 per cent.

There was a reduction of 10 per cent several months ago and when the Interstate Commerce Commission rendered its decision in Docket 13293 involving general reductions in rates effective July 1, 1922, the railroads did not interpret the order of the Commission as requiring an additional reduction of 10 per cent on scrap paper. So further negotiations were necessary resulting in this new reduction. Some examples of the reductions secured are shown in a lowering of the rate from New York city from 43½ to 39½ per 100 pounds and from Baltimore, 40½ to 36½.

Clarence A. Bradford, vice president of the Rex Paper company and secretary of the Michigan Paper Mill Traffic Association, declares that Kalamazoo valley mills are now heavy buyers from New York and Philadelphia markets and that the saving effect will be in excess of $25,000 annually to local concerns.

This readjustment was made possible through the co-operative efforts of George J. Bolender, traffic manager of the Kalamazoo Chamber of Commerce and Ralph L. Tuttle, traffic manager of the American Box Board company, Grand Rapids, Mich.

Japanese Paper Men to Leave for England

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., September 18, 1922.—The Japanese paper manufacturers, T. Okawa and K. Satow, who passed several days in this city at the Bagley & Sewell plant and inspecting paper mills in the Black River Valley, left this city for New York Wednesday morning. They were shown every courtesy while guests of this district and expressed themselves as highly pleased with conditions and the treatment accorded them. They did not place any orders here, so far as could be learned.

It was their plan to take passage for England on September 23 on board the White Star steamer *Celtic*. After traveling through paper mill districts of Europe, they will return to this city some time this Winter.

Suspend Paper Schedules in Middle West

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., September 20, 1922.—The Interstate Commerce Commission has suspended until January 13, the operation of certain schedules published in Agent F. A. Leland's Supplement No. 26 to I. C. C. No. 1501, Agent W. J. Kelly's Supplements Nos. 35, 36 and 37 to I. C. C. No. 924 and other tariffs published by those agents.

The suspended schedules propose both increases and reductions in the rates on paper and paper articles from numerous points in Michigan, Wisconsin, Minnesota, Chicago, Illinois, and other defined territories east of the Mississippi River, to points in Arkansas, Louisiana, Oklahoma, and Texas.

File Bankruptcy Petition Against Gatti-McQuade

Coming as a distinct surprise to the trade was the announcement of the filing of a petition in bankruptcy against the Gatti-McQuade Company, of 200 Fifth avenue, New York. Proceedings were filed last Saturday and Judge Manton has appointed John B. Johnston receiver under bond of $25,000. It was announced Tuesday of this week that Mr. Johnston had also been appointed ancillary receiver in both New Jersey and Pennsylvania and that he has filed his bond act.

The receiver has expressed his desire to the attorney for the company, H. H. Bowman, of 38 Park Row, New York, that the committee of creditors, appointed March 23, should continue in an advisory capacity and give Mr. Gatti the benefit of their advice and assistance.

"The business of the Gatti-McQuade Company," said Mr. Bowman in an interview with the PAPER TRADE JOURNAL representative, "will be carried on with no change in organization, with the consent of the court, for such a length of time as will insure a complete rectification of all outstanding liabilities." Mr. Bowman emphasized the fact the following creditors, who signed the bankruptcy petition, were working in absolute harmony with the company and that there would be no suspension in operations: Samuel A. Waldstein, $572; Gratton & Knight Manufacturing Company, $40; W. C. Jones Company, $11,205. None of these petitioners are members of the creditors' committee which paid such flattering tribute to Joseph Gatti last March when it voted unanimously to allow the company to continue its operations under Mr. Gatti's supervision until March 8, 1926.

No statement has yet been made by the creditors' committee, which consists of the following men: Arthur C. Hastings, of H. G. Craig & Co.; Frank C. Overton, of Castle, Gottheil & Overton; Alton Faunce, of Price & Pierce, Ltd.; Patrick McMeel, of Wm. Hughes & Co.; and Robert H. Krueger, of the New York *American*. This creditors' meeting was held in response to a request from the Gatti-McQuade Company, and the sixty-five representatives the creditors represented upwards of $600,000 of the total of about $900,000 unsecured liabilities which were alleged to have been outstanding.

In announcing the bankruptcy proceedings, several of the metropolitan newspapers have placed the firm's present liabilities at about $1,000,000, offset by assets aggregating approximately $500,000. The concern owns a plant in New Jersey as well as in the eastern district of New York.

The attitude of the PAPER TRADE JOURNAL as well as those in the trade was aptly phrased in the account of the former proceedings which appeared in the March 30 issue:

"The entire trade has the highest regard for Mr. Gatti by reason of his honest and straightforward business principles and his consistent application of them, and his creditors are going to see him through the crisis and assist in rebuilding the business he represents. . . . The Gatti-McQuade Company has always made money in the past and under the same supervision of its able executives should be able to prosper in the future now that the most trying time in all the history of paper is over."

S. D. Warren Co. Gets Verdict

[FROM OUR REGULAR CORRESPONDENT]

BANGOR, Me., September 19, 1922.—A directed verdict for the S. D. Warren Company, paper manufacturers, of Westbrook, was directed in the Penobscot County Superior Court last week in the case of Webster F. Chute, of Clifton vs. the S. D. Warren Company, of Westbrook, action being brought to recover $500 damages for alleged breach of contract. Claim of the defendant corporation that no contract existed was sustained by the court. Exceptions to the directed verdict were entered by Howard Cook, attorney for the plaintiff.

XUM

BELGO PAPER REORGANIZES WITH OFFICES AT MONTREAL

New Company Will Have an Authorized Capital of $20,000,000 of Which $14,000,000 Will Be Issued—Output of the Plant at Shawinigan Falls Will Be Increased from 200 to 350 Tons Daily—Quebec Government Considers Establishment at La Tuque of a School for Teaching Study of the Manufacture of Pulp and Paper—Edward Beck Speaks on Paper Development.

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., September 18, 1922.—Negotiations for the transfer of the Belgo-Canadian Pulp and Paper Company from Belgium to Canada have been successfully concluded. The new name of the company will be the Belgo Paper Company, with head offices at Montreal and mills, as at present, at Shawinigan Falls. The new company will have an authorized capital of $20,000,000 common stock, of which $14,000,000 will be issued, and in addition $1,500,000 in bonds. The output will be increased by next year from 200 to 350 tons daily. Several years ago, when it was decided that it was advisable for the headquarters of the company to be changed to Canada and a Canadian charter to be secured, an intermediate company was formed, namely, the "Belgian Industrial Company," which took over the preferred and common stock of the Belgo-Canadian Pulp and Paper Company and gave in exchange 56,000 shares of common stock of no par value. This company was in existence for 16 months and went out of existence on Friday of last week and the Belgo Paper Company began its career. It is understood that for each share of the Belgian Industrial Company $250 was paid the shareholders of par value in common stock of the new company, the Belgo Paper Company.

The Belgo Paper Company has excellent limits on the St. Maurice River, along which the plant is located, amounting to about 1,700 square miles and estimated to contain about 6,000,000 cords of excellent pulpwood. Power is supplied the company by the Shawinigan Water and Power Company, generated in the same center.

The officers of the new company are as follows: President, Adolphe Stoclet, Brussels; vice-president and general manager, H. Biermans, Shawinigan Falls; other directors, Count Hypolite D'Ursel, Alfred Rouvier, Lambert Jadot, Gaston Perrier, Albert Marehal; secretary-treasurer, A. Dehauffe.

Pulp and Paper School

The Quebec Government has under study at the present time a project for the establishment of a school at La Tuque for the teaching of pulp and paper making. The council of the town of La Tuque has passed a resolution urging the Government to establish a school there. It is likely that this question will be studied by the Cabinet at an early date.

Paper Mill for British Columbia

Negotiations for the establishment of another large British Columbia paper mill have been started with Premier Oliver by representatives of the Seamen Paper Company, of Chicago, and J. Read, of Vancouver, head of the Bridge River Power Company, which controls enormous power rights. Mr. Seamen is conducting the negotiations personally. His company is described as the largest paper-selling company in the United States. It is proposed to erect the pulp and paper mill at Seton Lake, which is 100 miles up the Pacific Great Eastern Railway from Squamish. Besides water power facilities, the Chicago men are looking into the pulpwood resources of the surrounding district, which they will draw on for raw materials. The Seamen interests are now looking to British Columbia for their raw materials following the decision of the syndicate formed by the *Chicago Daily News* and the *Chicago Tribune* to establish their $13,500,000 paper plant at Elko, B. C.

Edward Beck on Developments in Canada

Edward Beck, secretary of the Canadian Pulp and Paper Association, last week paid a visit to Groveton, N. H., where the Brompton Pulp and Paper Company, of East Angus, Que., has mills, and while there gave a public address on the history and future of the paper industry. He said Canada was destined soon to outstrip all other countries in the production of wood pulp and the coarser grades of paper. He mentioned that the exports of pulp and paper had risen from $122 in 1890 to $163,655,344 in 1921, and said Canada has the largest single news print mill in the world, the Abibiti Power and Paper Company's mill at Iroquois Falls, Ont.; the fastest news print machines in the Laurentide Company's mill at Grand Mere, Que.; the largest ground wood pulp mill, owned by the Chicoutimi Pulp Company, Ltd., at Chicoutimi, Que., and the largest kraft mill, owned by the Wayagamack Pulp and Paper Company, at Three Rivers, Que. He further stated that there are now under construction in Canada two new news print mills, one at Three Rivers, Que., and one at Fort William, Ont., each of which will add 120 tons a day to the producing capacity. The Bathurst Company, Ltd., are about to build a 50-ton news print mill at Bathurst, N. B., which will later be increased to 100 tons. Contracts have been awarded for the first unit of a new $13,000,000 plant at Elko, B. C., which, when completed, will give an additional 100 tons and ultimately probably three times that amount. Two of the older mills are adding new paper machines and a new two-machine book paper mill is under construction at Port Arthur, Ont. A 20-ton light weight specialty mill is under construction at New Westminster, B. C. These developments indicate a potential output of 1,500,000 tons of news print by Canadian mills in 1924, or about 60 per cent of the present total consumption of that class of paper used on the North American continent, and as much as was produced in the United States and Canada combined prior to 1912.

Shawinigan Manager Banqueted

Julian C. Smith, vice-president and general manager of the Shawinigan Water and Power Company, was tendered a banquet at Shawinigan Falls a few days ago on the completion of his twentieth year in the service of the company. About 500 were present. The speakers included J. E. Aldred, president of the company and chairman of the banquet; Premier Taschereau, Hon. Jacques Bureau, Gordon MacDougall, K. C., Beaudry Leman and Dr. J. A. Dufresne, Mayor of Shawinigan Falls.

A richly illuminated address, signed by 450 employees in the service of the Shawinigan Company and its subsidiaries for five years or more, was offered to Mr. Smith as an expression of the esteem and affection in which he is held. Other mementoes of the occasion included a Zeiss engineer's telescope, presented by the employees, and suitably inscribed. Mrs. Smith was also remembered, and a diamond brooch was the gift of his associates and a silver box from the women employees of the company.

Paper Simplification Committee to Meet

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., September 20, 1922.—The paper simplification committee which was appointed by the Bureau of Standards of the Department of Commerce, will have a meeting on Friday of this week, at which time a tentative report on simplification of paper sizes will be prepared and submitted to the Bureau. This report will also be submitted to the standardization committee composed of paper manufacturers, which will meet at the Bureau of Standards on September 25. The report will also be submitted at a later date to paper jobbers and dealers.

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UPWARD PRICE TENDENCY IN PHILADELPHIA MARKET

While There Have Been No Actual Advances There Have Been Some Price Readjustments and in Every Case the Tendency Has Been Upwards—Philadelphia Paper Trade Association Held Quarterly Meeting on Friday of Last Week—Paper House of Pennsylvania Issues Statement Setting Forth Wherein a Paper House Differs from a Bank—General News of the Trade.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, September 18, 1922.—While there were no general advances in prices during the week, there were quite a number of readjustments reported, particularly in book papers of all grades, and in every case the movement was upward, although in no case was it in large amount. All this class of paper is selling very well to out-of-town consumers, but buying locally is in limited quantity. Other fine paper lines are moving along steadily, but not briskly.

The coarse paper market showed during the week an even larger and more general improvement than did the fine paper and all grades are moving along actively. There still continues a flurry in the boxboard situation, although the peak prices of a week or so ago still continue, and that firm level is maintained, despite the opinion entertained even by some of the distributors that a recession must come. Wide difference of opinion exists, however, over the time of its advent. The paper box makers are now fairly well stocked up and their own distribution of the finished product is not large. Many of them, therefore, have eased off buying. There are enough advance orders on the lists of the local mills to keep them busy for some weeks, however, and it is possible that because of the strike terminations paper box consumption will start in at such a rate as to bring forth additional orders. Packers of paper stock continue to have no difficulty in disposing of all the material they are receiving, although mill demand eased off to some extent during the week.

Paper Trade Association Meets

The entirely satisfactory conditions in the trade were voiced at the quarterly meeting of the Paper Trade Association held on Friday afternoon of last week in the Chamber of Commerce and quite largely attended. Dominant sentiment in the discussion was that price movements generally were upward and that there was a sufficient basis of fear for impending scarcity in some lines to warrant urging of consumers to place orders. It is understood that the remainder of the session was given over only to routine business, but of the members seen all declared that they were obligated not to discuss association matters in any way. It was not possible to secure an official and authoritative statement of the proceedings.

A Paper House Is Not a Bank

The forthcoming issue of the bulletin of the Paper House of Pennsylvania, which will be placed in the mail during the current week, gives first place position to a description of Finland's largest industrial enterprise, Kymmene Aktieolag, the great manufacturing plant located in the eastern part of Finland, 100 miles from Petrograd. It is the largest undertaking in Finland, and its capital and surplus are equivalent to $27,800,000 and includes over 600,000 acres of forest land.

Of far greater importance and interest to the paper trade, however, is a statement which will come home close to many in the industry at this time, and because of experiences that still are fresh in the memory. The bulletin makes this statement:

"In some quarters there seems to be a prevailing idea that a paper house should perform the functions of a bank—that terms should be such as the customer finds most convenient and if payments cannot be made further extensions allowed.

"We would like to find even a bank where such accommodations are to be had. The very life of the paper house is founded on frequent turnovers and prompt payments. If a buyer wants a certain item and one paper dealer cannot supply it he goes elsewhere for immediate delivery. Yet the same buyer thinks nothing of withholding payments for the same material on which he demanded prompt service. Such a buyer seems to work on the principle that his business is so desirable that the paper house must extend credit to retain his patronage.

"We are reminded of a recent case wherein a stable looking publishing business went bankrupt with a paper house as its largest creditor.

"So great was the loss that the paper men had to make explanations to their own bankers. Summed up, their excuse was that the publishing enterprise had looked so prosperous and its paper business was so worthwhile that the paper house felt that not only was it taking a good risk but that it was holding an excellent customer by an entirely justifiable extension of accommodation when it advanced cash for the meeting of pressing bills.

"Of course, the inevitable result was that it soon found itself advancing more money to protect that already spent—thus went the usual process of throwing good money after bad until there came the collapse. This is an exceptional case, but it serves like others to point the moral and to emphasize the fact that the paper house which permits itself to be used as a bank is tempting fate."

Charles Beck Co. Activities

All the sales organization of the Charles Beck Company distributing the Warren line spent the early part of last week at the mills in Cumberland on an educational tour, witnessing the manufacture of paper and receiving instructions as to the adaptability of the various lines to the purpose for which they are best suited. Included in the party were Andrew Simon, purchasing agent; Harold A. Leduc, advertising manager; Harold Simon, Gus Johnson, Harry Glenn, Elwood Wagner and L. Harry Rees, of the service department. They left the city Monday night and returned in time for business Thursday morning. Leon Beck, head of the company, has before him quite an extensive itinerary and one which will keep him out of the city during the paper trade golf contest, in which, however, his interests are those of a spectator, not a player. He left during the mid-week to attend the Strathmore meeting at Mitteneaque on the 18th and 19th. From thence he will go to the Warren meeting at Poland Springs on the 21st to the 23rd and thereafter to the Crocker-McIlwain Certificate Bond meeting at Holyoke the 25th and 26th.

Philadelphia Paper Men Play Golf

Attendance was not up to expectation at the annual tournament of the Philadelphia Paper Trade Golf Association held on Tuesday and Wednesday of this week on the grounds of the Merion Cricket Club at Ardmore, but sportsmanship and camaraderie fully realized the highest expectations of the most enthusiastic. Many prospective players doubtlessly were prevented from entering the contests because of their presence at the meetings in the mills of the Warren, the Strathmore, or the Crocker-McElwain Company. Prizes were two for each eight in the kicker's handicap and two for each eight in the low neck scores. The contest was held on the famous West Course of the Cricket Club, a green of wide repute. There follows a list of the participants in the tournament and in the annual dinner held on the evening of the first day of the match.

W. H. Anders, Perkins-Goodman Company; Norman Bardeen, Lee Paper Company; S. A. Benedict, Jessup and Moore Paper Company; William J. Boyd; Thos. W. Price Company;

(*Continued on page 22*)

XUM

Packard Trucks Save Money

ASK THE MAN WHO OWNS ONE

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In 585 cities and towns throughout the United States, Packard Truck Service Stations give owners highly skilled service at a reasonable cost. Packard Truck costs, always low because the sound Packard construction minimizes the need of repair, are held still lower by this expert, broadcast service.

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This particular preference for Packard Trucks is traceable, in part, to the Packard Truck's notable dependability. It is due, to some extent, to the fact that Packard Truck prices are generally lower than those of other first-quality trucks.

The main reason, however, for the popularity of Packard Trucks with the smaller business, as with fleet owners, is the fact that Packard Trucks actually do give more years of service at lower cost.

This has been proved, time after time, and over and over again. Current proof is to be had from any Packard owner.

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PACKARD MOTOR CAR COMPANY, DETROIT

PACKARD TRUCKS

XUM

UPWARD PRICE TENDENCY IN PHILADELPHIA MARKET

(*Continued from page 20*)

Fred T. Burkhardt, Parsons Paper Company; George Cadwell, American Writing Paper Company; Alex Calder, Union Bag and Paper Corp.; Louis Calder, Perkins-Goodwin Company; Harry F. Donahue, Molten Paper Company; H. A. Earle, Whiting-Patterson Company, New York; Eugene W. Fry, Jessup and Moore Paper Company; William H. Holden, Holden and Hawley; W. D. Judd, Hampshire Paper Company; Clarke H. Morian, J. L. M. Smythe Company; Irwin N. Megargee, Curtis & Bros., Inc.; W. D. Pringle, Seaman Paper Company; Walter E. Perry, Chemical Paper Company; A. B. Sherrill, Riegel and Company; Harrison Starr, Brown Company, Berlin; J. L. N. Smythe, J. L. N. Smythe Company; Roger B. Taft, Hammermill Paper Company; S. L. Willson, Graham Paper Company, St. Louis; Edwin A. Weihenmayer, Jessup & Moore Paper Company; A. E. Whiting, Whiting-Patterson Company; Wallace M. Weeks, Skaneateles; Kit S. Warner, John F. Sarle & Company; Fred Westlake and R. A. Wigert, Crane Company.

General News of the Trade

F. C. Van Gilder, of the sales organization of Riegel & Co., who recently was operated on has now recovered sufficiently to be able to return to his desk.

The Edwin T. Garrett Company, paper manufacturers at Lansdowne, Pa., is installing a 100-horsepower oil-burning engine of the DeLa Vergne type, in order to increase the capacity of the plant. The engine can generate electric current up to 100 horsepower.

Norman L. Jenkins, specialist in envelopes and with many years' experience during the course of which he was connected with both manufacturing and distributing enterprises in this field, has resigned his position with Riegel & Co. and has under consideration a number of other propositions.

M. O. Raguiel, paperstock packer, 3rd and Florist street, has closed his Summer cottage at Ocean City, N. J.

The Papermakers Importing Co., of Easton, Pa., extensive importers of China clay, has written letters to local trade bodies urging them to continue their education for the retention of the Philadelphia freight differential.

A Maryland charter has just been issued to the United States Paper Manufacturing Company, of Baltimore, officered by Johnston Best, Lewis C. Marryman and Gwendel Allen, who propose to erect a large mill in Baltimore. The company is capitalized at $3,000,000.

John Franz, of A. Hartung & Co., Inc., was among the paper salesmen members, of the associate organization of the Engravers' Club of Philadelphia, who won prizes at the athletic contest held on its outing on Tuesday of last week at Brown's Mills-in-the-Pines. E. Latimer, Jr., H. J. Fleming, The Raymond & McNutt Company, The Charles Beck Company and others were represented. Sixty engravers and associates left the city for the thirty-mile run to the Pig 'n Whistle Inn to partake of a chicken dinner, and after that an afternoon of outdoor games. National President Sauer, of the Engravographia, the national organization of the steel and copper plate engravers' trade, and a number of visitors from New York attended the outing, which was by long odds the most successful ever given, a bright sun appearing after dinner and making it possible to carry out all the programs scheduled. Many valuable prizes were awarded.

Howard LeFevre has taken the position as assistant manager made vacant by M. L. McCauley in the Auer & Twitchell Company, Inc., 20th street and Erie avenue. Mr. McCauley recently resigned his position to open up his own business, the M. A. McCauley & Co., of New York. The Auer & Twitchell Company is developing a large roll product business, trading principally with converters of toweling and toilets. The line of papers is manufactured by the Lehigh Paper Mill, of Raubsville, Pa., and distributed through the Auer & Twitchell Company. In the enlarged manufacturing space in the building at 20th street and Erie avenue, which the firm secured as its new headquarters last Spring, a large quantity of paper tubes are being manufactured and shipped in carload quantities from the railroad siding adjoining the new home.

Judge Thompson, in the United States District Court here, has issued an order in the proceeding of William Witmer & Sons, Inc., versus the Parson Pulp and Lumber Company, and Peter S. Barton versus William Witmer & Sons, Inc., to direct the City Bank and Trust Company at Hartford, Conn., trustee, to use funds in hand for the payment of coupon and interest on mortgage.

The Moore & White Company is completing a new machine for the Scott Paper Company at Chester for toilet manufacturing to be ready early next month. It is also rebuilding a number of machines for the Modena Mill of the Megargee Paper Company to operate on parchments. The company is perfecting a new screen of its own patent which it promises will keep repairs at a minimum, will require less power and will produce cleaner paper.

Forty Years with John Carter & Co.

[FROM OUR REGULAR CORRESPONDENT.]

BOSTON, Mass., September 18, 1922.—Max Frank, buyer of John Carter & Co., 597 Atlantic avenue, was agreeably surprised Saturday with a handsome gold chain and Masonic charm representing the 32nd and Shrine, of which bodies he has the honor of being a member, handsomely engraved on the inside, as the gift of the firm and his associates. The occasion was the completion of forty years of service with the Carter Company, the affair being arranged by Catano Fratus and Arthur Hooper, both of whom were connected with the concern when Mr. Frank joined it, and Robert B. Pierpont, manager of the Providence warehouse.

It was in September, 1882, that the young man, Frank, left his home in Pennsylvania to seek his life-work and fortune in New York City. Finding neither there he came to Boston and was soon employed in the shipping department by the late John Carter, then located at 123 Franklin street. The firm's city delivery service then consisted largely of Max and his wheelbarrow, but not for long as the young man soon convinced Mr. Carter of his ability to make friends and customers for the concern. He progressed rapidly as errand boy, shipper and salesman and in a few years became the buyer for the paper department, a position he has held for many years. "Max," as everyone in the paper trade knows him, is highly regarded by the mill men with whom he has done business these many years who will join with his associates in congratulations and best wishes. Mr. Frank resides with his family in Brookline.

Certificate Bond Agents to Meet

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., September 18, 1922.—The third annual Certificate Bond conference of the mill agents of the Crocker-McElwain Company, of Holyoke, Mass., will be held at the Hotel Novotuck, Holyoke, on Monday and Tuesday of next week, September 25 and 26. Monday will be given entirely to the business meetings, and Tuesday morning the representatives will be addressed by E. St. Elmo Lewis, of New York, whose subject will be "The Handwriting on the Wall." Tuesday afternoon will be devoted to entertainment, with a golf tournament at Mt. Tom Golf Club, auto trips and dinner on top of Mt. Tom. A large attendance is expected.

XUM

Experience

Service

Years ago we advertised: "If you are in the market for one ton or a thousand tons, our facilities—the result of many years' experience—are at your disposal." We have never reduced our minimum, but our added growth and the careful development of consistently sound business methods have enabled us to vastly increase the maximum.

M. GOTTESMAN & COMPANY

INCORPORATED

18 East 41st Street

New York, N. Y.

U. S. A.

HOLYOKE OFFICE
185 Pine Street

KALAMAZOO OFFICE
No. 1 Humphrey Block

STOCKHOLM OFFICE
Stureplan, 13

PAPER BUSINESS IN TORONTO CONTINUES FAIRLY ACTIVE

While There Has Been Some Falling Off During the Past Few Days the Trade Continues Optimistic Regarding the Future—Long Price List Goes Into Effect in Toronto—Board Prices Are Again Advanced—New News Print Mill of the Fort William Paper Co. Expected to Be Placed in Operation Within a Few Weeks—Nipigon Fiber & Paper Co. Makes an Assignment.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., September 18, 1922.—With a tendency to firmness in prices, the business in the paper line continues fairly active, although some dealers report that there has been a falling off during the past few days. On the whole, however, the trade is optimistic, the settlement of the coal strike and the railway trouble relieving their feelings to a large extent. So close had the supply of bituminous run with some mills in Ontario that they sent to Wales and had Welsh coal brought in at double the cost of what the ordinary ton from over the border can be laid down. The manufacturers were taking no chances.

News Print in Active Demand

News print is in active demand and it is not thought there will be any change in price before the end of the year, when most contracts expire. There is very little talk of an advance for the coming quarter and the present disposition of most manufacturers seems to be to let well enough alone.

The largest news print unit in Canada under one roof is the plant of the Abitibi Power and Paper Company at Iroquois Falls, which has of late been breaking records and is now aiming at a production of 500 tons a day, and when that is attained R. A. McInnis, the manager, has planned to give the employees a banquet. One day recently the machines turned out over 493 tons without any extra effort or speeding up.

There is good demand for book and writing papers and manufacturers are firm in getting the prices that prevail and accept business only with a qualifying clause that if there is an advance before the delivery of the order the customer must pay the new rate. One wholesaler stated this week that if the Canadian plants demanded too many exactions he was of the opinion that more importations of bond, ledger and high-class writings from the Old Country would be brought in, as English firms are directing more attention now than ever to the Canadian field.

Price Stiffening in Other Lines

There is a stiffening of prices in other lines, and it is stated that an advance may take place soon in toilet and tissues. Mills are running from four to six weeks behind in deliveries. Envelope manufacturers report quite an improvement in trade and some are producing at 75 per cent capacity, whereas the majority for months have been operating at less than half the total output of their plants. Coated paper mills are busier, and practically all branches are looking forward to an active Fall trade. The printing shops are still rather slack.

The long price list which has been adopted on flat papers was put into effect by some wholesalers at the beginning of the month. This week has been set for the date of its adoption by the rest of the trade. It is thought the plan will work out all right if given a fair, impartial trial, but some jobbers are not endorsing the scheme any too wholeheartedly.

In the rag and paper stock markets prices remain firm and there is an excellent demand for all grades. There has been a lively call for all kinds of new cotton cuttings, particularly white and unbleached. Prices are holding steady, with an advancing tendency in other domestic rags.

Board Takes Another Advance

Board mills are greatly behind in orders and paper box factories, which had allowed supplies to run low, are now clamoring for stock. The approach of Fall and Christmas trade has caused the box and carton makers to take on much new business. The board mills are now quoting $10 more per ton on all lines in addition to the advance of 10 per cent which went into effect a couple of weeks ago. Many orders have been turned down by the mills which are unable to supply the quantities desired. It is rumored that American buyers have been in Canada recently endeavoring to purchase supplies.

Big Pulpwood Pile Gave Way

A peculiar accident occurred in Thorold, Ont., last week when the slide of an immense pile of pulpwood belonging to the Ontario Paper Company blocked the Welland Railway. While a Grand Trunk Railway engine was shunting on the spur line at the mill it is thought the vibration from the engine and the cars caused some blocks of pulpwood holding the key position to slip from underneath the pile of several thousand cords. As a result, a large proportion of the wood fell across the tracks, blocking traffic for several hours and damaging some cars which were being shunted.

New News Print Mill Nearly Ready

It is expected that the new news print plant of the Fort Williams Paper Company at Fort William, Ont., will be operating within six weeks. Two machines, each of 194 inches width, have been installed and the capacity will be about 150 tons daily. Col. Thomas Gibson, of Toronto, who is vice-president of the Spanish River Pulp and Paper Mills, is president of the company, which has for some time been operating a ground wood plant at Fort William, with an output of 120 tons daily. The new paper mill rounds out the building program of the company.

Hydro-Pulp Plant Resumes

That there has been a decided improvement in the ground wood pulp situation is evidenced by the resumption of activities of the Hydro-Electric Commission Pulp Mill at Campbellford, Ont., which has been shut down for several months. The capacity of the plant is about 30 tons daily and the manager is Elie Brunelle.

Nipigon Co. in Financial Trouble

The Nipigon Fibre and Paper Company, Nipigon, Ont., has made an assignment. The mill has been closed down for some time. Recently an application was made in Toronto for an order to place the company in the bankruptcy court. The matter was adjourned by Mr. Justice Mowat to determine who should have the conduct of the liquidation. There are a number of creditors, among them being the Provincial Hydro-Electric Power Commission, whose claim amounts to $90,000, nearly half of which is said to be secured by a bond. The petitioning creditors ask that T. D. Roberts be named as receiver.

Notes and Jottings of the Industry

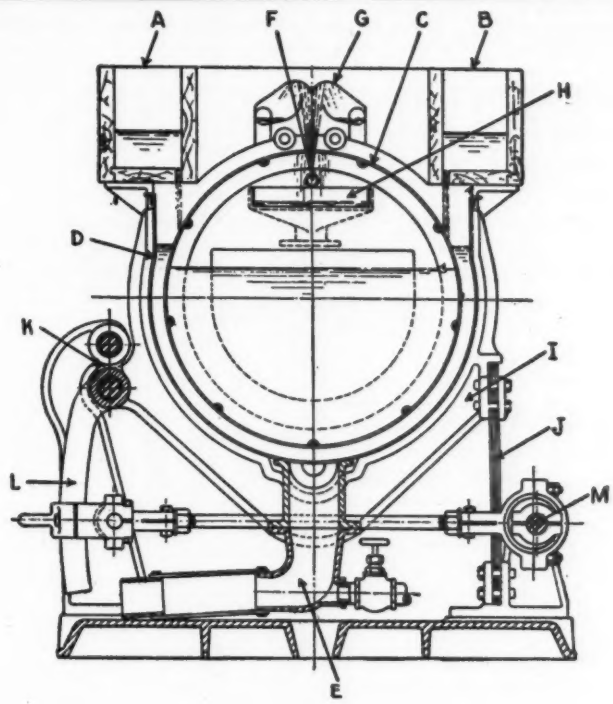
J. Hewitt, president of Paper Sales, Ltd., Toronto, and wife are spending their vacation at Peninsular Lake in the Huntsville district.

A. F. Voight, of New York, treasurer of the Arabol Manufacturing Company, wife and family were visitors to Toronto last week. The company has established a plant at Brampton, Ont., where it has begun the manufacture of its various lines, specializing on cold water solubles as well as other brands of adhesives.

John Martin, of the John Martin Paper Company, Winnipeg and

(*Continued on page* 26)

XUM



You can see for yourself how simple it is —

A glance at the sketch above will show you the simple, sound construction of the BIRD ROTARY SCREEN.

The unscreened stock enters through Flow Boxes A and B, which discharge into Vat D, outside of Cylinder C, which is slowly revolving. The stock is screened through the cylinder by means of gravity and the slight assistance given it by rapidly but gently shaking Vat D. From the inside of the cylinder the stock flows through one end into the head box or any intermediate box. Impurities held back by the plates settle toward Drain E, from which they can be removed intermittently by flushing, or continuously to an auxiliary screen. The slots in the cylinder are kept constantly clean by Shower F. The water is trapped and kept out of the stock by Winged Pan G above the plate and Tray H beneath it.

The Bird Rotary Screen—
Increases production
Improves quality of stock
Saves operating expense
Saves labor.

Let us send you a bulletin containing a complete description of the BIRD ROTARY SCREEN.

BIRD MACHINE COMPANY

South Walpole Massachusetts

Western Representative
T. H. Savery, Jr., 1718 Republic Bldg., Chicago, Ill.

Canadian Builders of Bird Machinery
Canadian Ingersoll-Rand Co., Ltd., 260 St. James St., Montreal, Canada.

BIRD ROTARY SCREENS

88-234

XUM

MORE INQUIRIES FOR PAPER IN THE CHICAGO MARKET

While Actual Orders Have Not Been as Plentiful as Was Expected, the Outlook for Future Business Is More Encouraging—Paper Is Being Supplied More Freely and Buyers Show More Disposition to Reorders If Prices Are Satisfactory—Graham Paper Co. Leases Five Story Building at 440-450 Canal St.—W. H. Lyon Heads Blunden-Lyon Paper Co.—Aetna Waste Co. Increases Stock.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, September 18, 1922.—During the past week orders have not been as plentiful as were expected, but inquiries that mean future business have been rather numerous. Shipments seem to be improving and many concerns have written that the Central States and Middle Western territories are being supplied with all necessary commodities to continue all kinds of manufacture. Paper shipments have been given considerable attention by the sales managers and they announce that everything possible has been done to expedite the delivery of goods. Many of the buyers have been supplied during the past several days and are willing to reorder if prices are satisfactory.

Graham Paper Co. Leases Larger Quarters

Expanding business caused the Graham Paper Company to seek larger quarters. The company has leased from Bertha Korup et al a five-story-and-basement building at 440-500 Canal street for an indicated sum of $51,150 from September 1, 1922, to April 30, 1930. At the present time the branch office of this company is located at 1136 South Wabash avenue. The Graham Paper Company has been operating in Chicago for the past ten years, and its home office, which is located in St. Louis, has been doing big business for the past 67 years.

Western States Paper Association Meets

The Western States Paper Association, including Chicago, recently met at the Union Club, Dearborn and Jackson streets, Chicago. The members discussed current business topics, the strike situations and other matters of importance. A number of jobbers were present at the meeting and gave their opinions and ideas of existing conditions.

W. H. Lyon Heads Blunden-Lyon Paper Co.

Blunden-Lyon Paper Company, 730 West Monroe street, which was organized in 1912 by Blunden & Lyon, has reclassified its stock and the president of the company, Mr. Blunden, has retired and sold the controlling interest to W. H. Lyon, who has been recently elected president.

The new officials of the company are as follows: W. H. Lyon, president; E. H. Fulton, vice-president; Ben H. Preston, secretary, and C. A. Lyon, a former stockholder, treasurer.

The new company will do business under the same name, Blunden-Lyon Paper Company, until future notice. The company deals chiefly in bonds and ledgers and officials announce that business is very good.

General News of the Trade

The Atena Waste Paper Company, 1460 Blue Island, has increased its capital stock from $2,500 to $20,000. Formerly there were four directors in the company but recent reclassification reduced the number to three.

The Forsythe Paper Company, 10 South LaSalle street, reports that business is running very well, inquiries and sales have increased and the general tendency of the market has been toward activity.

J. R. Russel, manager of the Marathon Paper Company, 111 West Washington street, recently returned from a trip to Denver. Mr. Russel anticipates advanced prices and a shortage of freight cars when business has returned to a normal resumption. While in Denver Mr. Russel was in company with C. E. Lyter, former ex-secretary of the National Paper Trade Association.

BUSINESS FAIRLY GOOD IN TORONTO

(*Continued from page 24*)

former president of the Canadian Paper Trade Association, was in Toronto last week on a business trip.

H. E. Allen, of Paper Sales, Ltd., and wife have returned after spending a holiday in Buffalo and other points.

A. M. Barkwell, of the Barkwell Paper Company, Winnipeg, and family, who have been East on a trip, returned home last week. Mr. Barkwell reports that the paper trade in the West is steadily improving.

H. G. French, secretary-treasurer of the Allen Paper Company, Toronto, and Mrs. French have returned from a vacation jaunt down the St. Lawrence as far as Tadoussac.

A. P. Costigane, of Toronto, attended the recent annual convention of the National Safety Council in Detroit. He is a former chairman of the Pulp and Paper Division of the organization.

The Toronto Paper and Twine Company, 107 Simcoe street, Toronto, which has been in business for several years, has closed.

J. M. Finlay, secretary-treasurer of Ritchie & Ramsey, coated paper manufacturers, Toronto, is visiting in Holyoke and other New England points.

A. G. Hinzke and wife have returned to Port Arthur, Ont., after spending a vacation in Indiana. Mr. Hinzke is superintendent of the Port Arthur pulp plant of the Provincial Paper Mills Company, Toronto.

A party of 75 business men from the Toronto Board of Trade have been on a tour to Northern Ontario. They visited the pulp and paper plants at Sturgeon Falls, Iroquois Falls and Kapuskasing and were much impressed with the growth of these towns and the activities of the industry.

Pulpwood Market Dull at Watertown

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., September 18, 1922.—The pulpwood market in this section is very dull just now, according to E. W. Elsworth, a local dealer. He said that there was a strengthening of the market last Spring, but that it has again fallen into a quiet status.

"It will be but a few years before all the news print mills of this country will be turned over to some other production and all the news paper will be made in Canada," he said. "I prophesied 25 years ago that news mills would all go to Canada, and while this has not entirely happened, the trend is strong in that direction. They must move closer to the source of pulpwood."

Mr. Elsworth said that fully 75 per cent of the pulpwood used in local mills is imported from Canada. The war-time price ran as high as $40 a cord, but it is now standing firm at about $18.50 for four-foot peeled wood at the mill and $2 more for two-foot rossed wood, delivered.

He says that there is a larger amount of wood cut in the woods of Canada awaiting disposition, and that much of it will be sent across the border.

H. Plaut Continues American and British Line

H. Plaut, 431 Avenidor Alem, Buenos Aires, Argentine, has wound up the affairs of his old firm, the H. Plaut Trading Company, but will continue to represent the same American and British manufacturers whom he has represented in the South American market for many years past.

Forced to the Limit

Making Paper at High Speed the Machine Tender often forces his machine to the Limit.

At such times it is a test of the design, workmanship and material.

In the recent record Speeds of Beloit Machines, maintained for days and weeks at a time, the above elements have withstood the Limit successfully.

BELOIT IRON WORKS

BELOIT, WIS., U. S. A.

XUM

BOSTON DEMAND FOR PAPER SHOWS STEADY BETTERMENT

Paper Houses, However, Are Handicapped Because of the Difficulty Mills Are Having in Making Shipments—Many Customers Still Buying Only for Their Immediate Requirements in the Belief That Prices May Show a Decline in the Near Future—Worcester Paper Box Co., Because of Increasing Business in the West, Plans to Build Factory in That Section.

[FROM OUR REGULAR CORRESPONDENT.]

BOSTON, Mass., September 18, 1922.—Boston paper merchants report increased business for the month of August and a generally improved condition throughout the trade, and for the part of September already gone by better business than August is the report by many of the firms.

Several of the paper houses are experiencing considerable difficulty in getting their orders through because of the difficulty some of the mills are having in filling them. On the other hand, those paper houses who are exclusive New England agents for certain mills are experiencing no difficulty at all in getting orders filled, but they are running up against the freight embargo placed on shipments by several of the railroads, including the Boston and Albany Railroad, the Delaware and Hudson Railroad and the Lackawanna Railroad.

Practically the only products which are allowed through on these roads today are foods for human consumption, livestock and meat for immediate consumption, feed for livestock, perishable products, coal, coke, fuel oil, petroleum products, railroad material and shipments covered by permits. Thus several shipments of paper consigned to Boston paper merchants are held up somewhere on the road, greatly inconveniencing the merchants as well as the customers for whom they are intended.

Worcester Paper Box Co. to Build in West

Word has been received in Boston this week of the new plans of the Worcester Paper Box Company, a rapidly growing and prosperous paper box concern in this section, which plans to build a branch factory in the West in the near future, according to Harry Posner, vice-president of the company, who has just returned from an extensive trip through the West, combining business with pleasure and visiting Milwaukee, Duluth, Minneapolis, St. Paul and several other Western cities.

The possibilities of establishing a factory for the expansion of the business was carefully considered by Mr. Posner on his trip, because a large proportion of the business of the company comes from that section of the country. The Western branch of the company is an inevitable result within a year or two because of the rapid growth of the business.

In spite of the fact that costs have mounted rapidly in the past year in the paper boxboard business, Mr. Posner predicted an even greater increase in business during the coming year for his firm and other progressive firms. No location has been definitely chosen as yet, although several have been mentioned as possibilities.

General News of the Trade

Friends of Frederick P. Bagley, manager of the Cushnoc Paper Company, of Augusta, Me., have received word of his engagement to Miss Bessie Wing, of Augusta, Me., daughter of Mr. and Mrs. William W. Wing and a graduate of the Cony High School, 1917.

A survey of the entire situation in Boston and vicinity still shows that many of the customers of paper houses are following the "hand-to-mouth" system of buying, believing that high prices will have to take a tumble in the near future and also unable to finance deals of any great size because of the tightness of the money market. While this means more work and expense for the Boston paper merchants, they themselves are pleased, to a certain extent, with the new situation, because it means that the customers will not become overstocked and it oftentimes gives the paper merchants a chance to be of real service to their customers. And in this respect, Boston merchants are well known, because they never lose an opportunity to be of service.

In a recent number of the PAPER TRADE JOURNAL reference was made to the Andrews Paper Company, of this city, as being local agent for the Brown Company's kraft, fiber, bond, drug wrappings and spiral wound paper. This reference was wrong, because the Andrews Paper Company is the exclusive agent for the company's new kraft towel in Massachusetts and there are other leading jobbers throughout the state handling Brown's kraft paper, and the agents for their bond paper in Boston are John Carter & Co., Inc., and Arthur E. Ham & Son.

Several Boston paper merchants are featuring the various lines of the Whiting Paper Company, especially the Title ledger paper made by the company, which is a quality lift dried paper, moderately priced, with good erasing qualities and recommended by the company for loose-leaf and other commercial uses.

W. H. Claflin & Co., of 332 Summer street, have issued their new price list of Champion papers. Among the papers included are Aigrette Enameled book, Hamilton, Wedgewood (white) Hingefold (folding) enamels, White Litho (C 1 S) Velvett Enamel (white-semi-dull finish) enamel, Champion Colored Coated, Koatine (imitation coated paper), Champion Super (white and India tint), Champion English Finish (including India tint), Champion Eggshell (including India tint), Champion Machine Finish, Cream Postcard Bristol, Hamilton Postcard, XXX Embossing Cover Paper, Capitol Postcard, Mimeograph Paper, Champion Bond, and Champion Index Bristol.

Among the visitors in Boston this past week was W. S. Boyd, of the Deerfield Valley Paper Company, of Mountain Mills, Vt. The company has mills located at Munroe Bridge, Mass., as well as at Mountain Mills.

Warns Newspapers to Reduce Consumption

With news print this year setting a record for consumption, question arises as to the cause. The answer is the keen fight for circulation by large dailies all over the country. It has reached a point where the American Newspaper Publishers' Association has issued a warning to members asking for 10 per cent reduction in consumption.

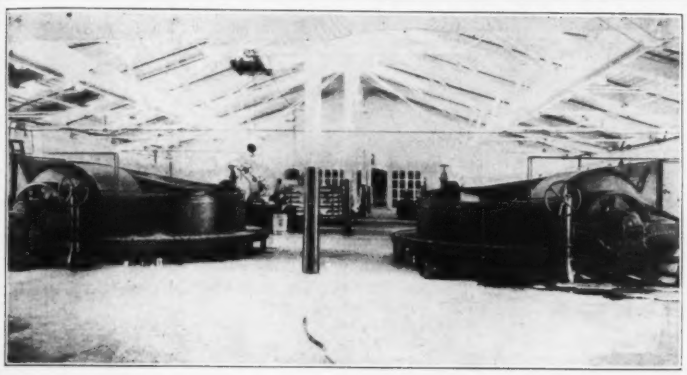
In the scramble for circulation, newspapers have been heavily increasing amount of news and other matter. Many special features are being used. On Sunday editions insertion of photographic and other special supplements has added ten pages on an average.

For comparison with this year's figures, those of 1920 can be used as normal. The 1921 figures reflect poor business conditions. Consumption so far this year shows a 13 per cent increase over two years ago.

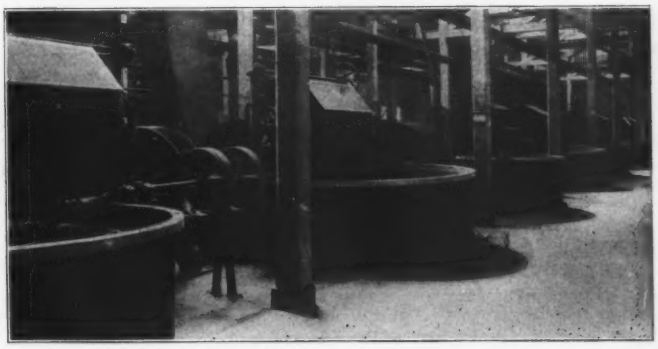
Figures compiled by the News Print Service Bureau show Sunday editions on an average in August were running eleven more pages than in 1920. Week day editions were three pages ahead of both 1921 and 1920.

News print consumption usually slumps in summer months and in January immediately after the large Christmas advertising campaigns. Last month figures of the bureau show that 62 papers in 21 cities with a circulation of 100,000 were running an average of 82 pages on Sunday and 23 week days, compared with 71 and 12, respectively, in 1920. High point was last April and May when Sunday editions were running 93 pages and week day papers 23 pages. The drop reflects the usual midsummer slump. Unless restriction is strictly practiced indications are that late this year consumption will again go back to the April-May rate. With better business conditions advertising should pick up considerably.

XUM



2 NIAGARA BEATERS Replace 6 Holland Type ENGINES



"One 2,000 lb. Niagara Beater takes the place of four Holland type engines. It used to take us 7 hours with the Holland beaters, but we now find we do equally as good work with the Niagaras in 2¼ hours."

Name of Manufacturer on Request.

Niagara Beaters As Space Savers

The quotation above, the letter reproduced at the right are but two of many examples of the Niagara Beater as a space saver. Of course, there is a variation on different stocks, but we do not know of an instance where one Niagara is not doing the work of two Holland beaters. The Niagara changes a crowded beater room into a roomy, efficient department. In a new plant it cuts down construction costs. Aside from the space saving feature, think of the saving in motors, belting, power, labor and installation cost. Write for further particulars.

Valley Iron Works Co.

PLANT: APPLETON, WISCONSIN
New York Office: 350 Madison Avenue

PITTSTON PAPER CORPORATION
WILLIAM J. EISNER—PRESIDENT SECRETARY AND TREASURER—STANLEY J. EISNER
OFFICE: 90 WEST ST., NEW YORK, N.Y. MILL: PITTSTON, PA.
TELEPHONES: RECTOR 3242 AND 3243. CABLE ADDRESS—PROMPTNE—A.B.C. 5TH. 5TH EDITION—LIEBER'S 5 LETTER CODE

Pittston, Pa., June 2, 1922

Valley Iron Works
Appleton, Wisconsin

Gentlemen:

In reply to your kind favor of May 17th, inquiring as to the results that we are getting from our Niagara Beater beg to advise that same has proven satisfactory in every respect, in as much as it has taken the place of two (2) fifteen hundred (1500) pounds beaters and one (1) eight hundred (800) pound beater. and it is doing equally as good work.

This surely speaks for itself.

Yours very truly,
Pittston Paper Corporation,

Supt.

CHR/MH

R. C. Rausch

STEAM TURBINES AND VALVES FOR PAPER MILL POWER PLANTS

WRITTEN SPECIALLY FOR THE PAPER TRADE JOURNAL BY W. F. SCHAPHORST

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The following article is the eighth in a series of articles to be printed in the PAPER TRADE JOURNAL *on the subject of Power Plant Machinery for Paper Mills. In this series of articles it will be the aim of the author to go through the entire power plant of the paper mill and give the non-technical official a pretty good idea of what he should have in his mill. As it is, owners and officials who are responsible for the buying frequently know very little about the different types of power plant machinery on the market.*

Steam turbines are divided into two main classes—"impulse" turbines and "reaction" turbines, depending upon the method used in converting the energy in the steam into mechanical energy. In addition to "impulse" and "reaction" we frequently meet with such expressions as "pressure stage turbines," "velocity stage turbines," "axial flow turbines," "radial flow turbines," and "tangential flow turbines."

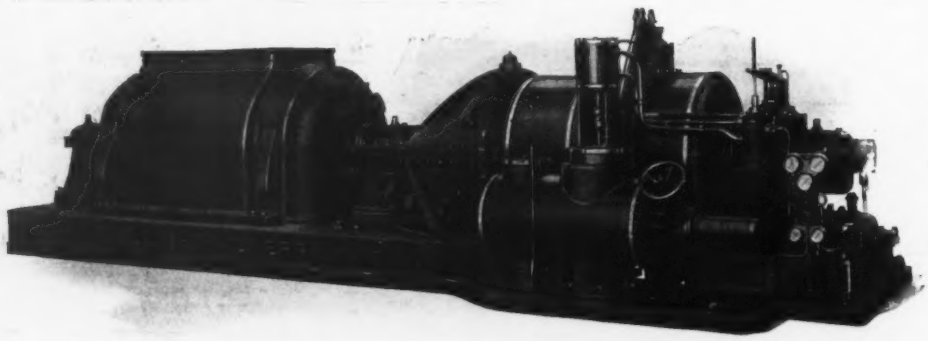

FIG. 1

Typical high pressure condensing steam turbine suitable for bleeder service in paper mills. Many units of this type are now serving mills in the United States ranging from 400 k.w. to 1,200 k.w., speed, 3,600 r.p.m. (Courtesy Allis Chalmers Company, Milwaukee, Wis.)

It is not necessary, however, that the purchaser for the paper mill know all about the theory of steam turbines, nor is it necessary to know the exact meaning of all of the above terms. What the average paper mill official wants is the turbine that will deliver the most power per dollar invested, most dependably, and for the greatest length of time. Few owners of automobiles, for instance, understand the theory of the automobile, but they *do* know the meaning of first cost and ultimate economy.

The steam turbine, according to history, was invented long before the steam engine, but until comparatively recent years it was not considered practical as a prime mover. It is much simpler than the steam engine, containing only one principal moving part—the rotor—which consists of one or more discs, wheels, or drums carrying buckets or blades. Steam jets, at very high velocity, then impinge against these blades or buckets and cause the rotor to rotate. In other words, the rotor of a steam turbine is moved around by steam, much like the windmill which is caused to turn by moving air. The difference is, wind velocity is seldom greater than 90 miles per hour, whereas the steam velocity in the steam turbine frequently surpasses 1,800 miles per hour.

Many Advantages

The steam turbine has many advantages over other prime movers, among which are the following:

(1) Few moving parts. There is only one large and important moving part—the rotor.

(2) Very little wear. The rotor is usually supported on only two bearings, consequently all of the mechanical wear takes place in these two bearings, which is so slight that it can be called practically nothing. Besides, bearings are easily rebabbitted or repaired after they are worn.

(3) No heavy reciprocating parts. The motion of the rotor is always in one direction and is purely rotary. The steam turbine therefore takes the place of the long sought rotary engine which no one has as yet been able to perfect. The so-called "rotary engine," in its usual design, contains a rotating piston behind which it is attempted to expand steam economically. A steam turbine uses rotating blades against which high velocity steam impinges, the velocity energy, or kinetic energy, of the steam thus being converted into work. It is usually claimed by "inventors" of rotary engines that steam turbines do not utilize the expansive properties of steam. The fact is: steam turbines utilize the expansive properties more perfectly than any other heat engine.

(4) No vibration. Elimination of reciprocating parts reduces vibration to almost nothing as compared with the vibrations that accompany reciprocating engines.

(5) Lighter foundations. Elimination of vibration eliminates heavy foundations.

(6) Smaller floor space. Steam turbines operate at much higher speeds than steam engines and consequently much less space is required. Roughly, a steam engine that runs 300 r. p. m. produces twice as much power as an engine that runs 150 r. p. m., all other conditions being the same. Consequently size is approximately inversely proportional to the speed.

(7) Easier to operate. Steam turbines contain very few trouble-producing parts, require practically no lubrication, and in general are very dependable.

(8) No oil in exhaust steam. There are no rubbing, reciprocating pistons, as in the steam engine. Thus the oil nuisance is eliminated. With reciprocating engines oil often works its way into the boilers with the condensed steam and causes trouble. Oil in boilers has sometimes been the direct cause of boiler explosions.

(9) Close speed regulation. The rotor in the steam turbine acts as a flywheel as well as a propeller. It moves at a very high speed

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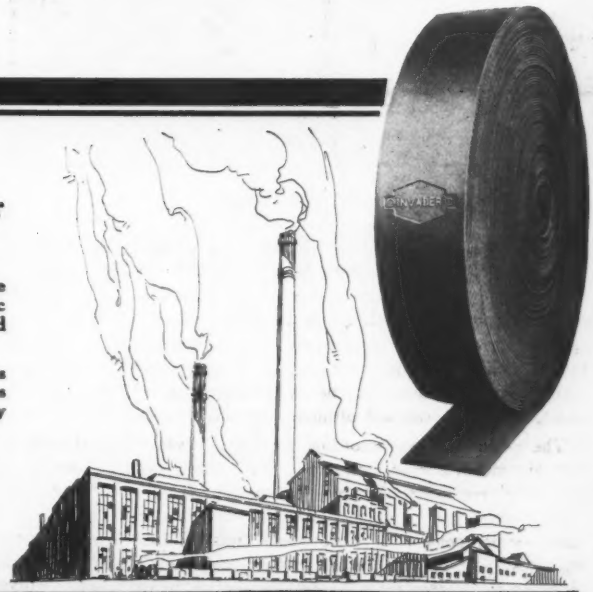

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—much higher than the average cast iron flywheel—hence its motion is not easily accelerated or retarded. There are no retarding forces on the steam turbine blades, similar to the retarding forces due to the starting and stopping of the reciprocating masses of the steam engine.

(10) Lower oil consumption. Lubricant is required for the two bearings, for the governor mechanism, and other moving parts, but the total quantity used is much less than is necessary with a reciprocating engine. Besides, this oil can be used over and over.

(11) No cylinder condensation. In the old reciprocating engine hot steam comes in contact with a comparatively cold cylinder wall, resulting in much steam condensation. This is avoided in the steam turbine because the steam flow is always in one direction, the temperature varying from one end of the turbine to the other end directly with the pressure of the steam.

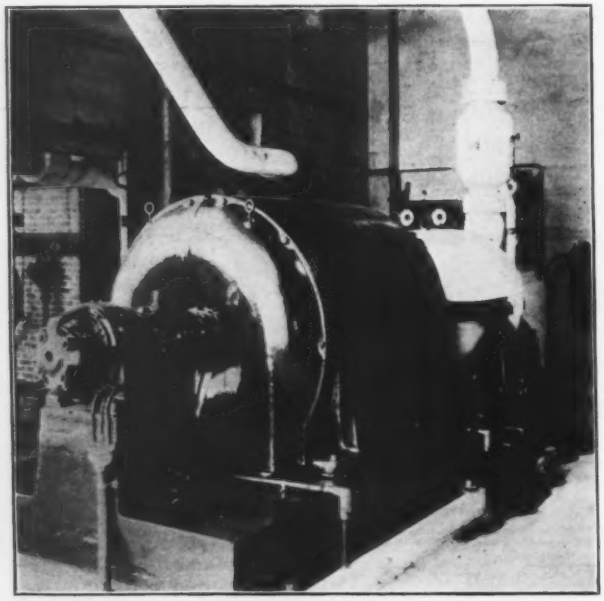

FIG. 2

Turbo Generator installation in the Washington Pulp & Paper Corporation plant, Port Angeles, Wash. These units may be either direct connected or geared. Direct connected units like the above are generally preferable. (Courtesy Moore Steam Turbine Corporation, Wellsville, N. Y.)

(12) Superheated steam can be advantageously used for the same reasons as mentioned in paragraph 11. It has long been known that superheated steam has its advantages in reciprocating engines as well as in steam turbines. It sometimes presents mechanical difficulties in reciprocating engines, however, due to its high temperature and the resulting distortion which it causes in the heated parts. In the steam turbine, on the other hand, the blades may become slightly distorted, or they may become discolored due to the high temperature but that will in no way detract from the efficiency of the turbine.

(13) Less danger from water. Many cylinder heads in reciprocating engines have been knocked out due to the presence of water in steam. Water is a very dangerous thing in such engines. In the steam turbine, however, the same danger does not exist, although it is nevertheless well to be careful and keep water out. In case water gets into the turbine, the turbine usually slows down until it passes out through the exhaust end.

(14) Lower first cost. In general, the first cost of a steam turbine is less than the first cost of a reciprocating steam engine of equal capacity. This may not always be true, but in four cases out of five it is safe to say that it is true. The surest way to find out, of course, is to compare prices from manufacturers of both steam turbines and reciprocating engines.

(15) Economical overload capacity. It is usually possible to overload either a steam engine or a steam turbine, but in both cases more steam will be required per horsepower developed. The turbine, however, is more economical when overloaded than the steam engine.

(16) A high vacuum is of more importance and results in greater economy when a high vacuum condenser takes the exhaust of a steam turbine than when it takes the exhaust of a steam engine. This point, however, is usually of not such great importance in paper mills.

The steam turbine has made such tremendous progress of late that it is almost without a competitor in the field of large power production work. It has invaded all fields—even where water power is plentiful. The paper mill power plant is one of these important fields. The horsepower of steam turbine units now used varies from practically nothing (as used in connection with blowers) to 60,000 horsepower and more.

In the selection of a steam turbine for a power plant much depends upon the needs of the plant. First, whether present units are worn out and are to be supplanted by new ones, which is virtually the same as equipping a new plant excepting that new boilers and other power plant devices may not be needed, and—Second, whether the present units are in good condition and merely need additional equipment to handle the greater peak loads that occur from time to time.

Sometimes conditions are such that additional power can be purchased from a nearby central station. In fact, it might be possible to purchase ALL power from the large central station rather than to put in any power plant at all, aside from heating units, etc. It all depends upon present conditions and possible future conditions. It is poor economy to operate an antiquated power plant at a loss when power can be purchased from a distant source for less than the cost of production in your own paper mill. It is poor policy to run almost anything at a loss. The money that would be required for the plant could be invested to better advantage in other directions. This is especially true today when new equipment and fuel are so expensive. In view of these several facts, it is evident that steam power plant changes must not be decided upon hastily. The problem must be carefully studied from every angle. The writer will not attempt to solve the problem in these pages because conditions are too varied. No two plants are ever exactly alike, and each problem is always at least somewhat different.

Turbine Speeds

The larger the turbine and the higher the speed, the more economical is the combination.

There was a time when turbine speeds were too high to be practical. It was difficult to belt directly to the turbine shaft because the pulley was, of necessity, very small, and there was the ever-present danger of slip. The turbine could not be slowed down because it would then lose considerably in efficiency. Good reduction gears were wanted for many years, but gear makers were unsuccessful in turning out a product that was sufficiently quiet. Today, however, we have good, accurately machined, comparatively quiet reduction gears, and as a result steam turbine rotors may now be operated at any speed that may be most economical. The reduction gears now produce shaft speeds from which belts and ropes may be easily run for operating the slower speed machinery in the paper mill, disconnected machinery such as pulp grinders, pumps, etc.

Steam turbines are made for operating on high pressure, low pressure or medium pressure. Some are called "mixed pressure" turbines because they are made to operate on a pressure of considerable range—high or low. Turbines are also operated condensing or non-condensing. Both of these latter may be used in paper

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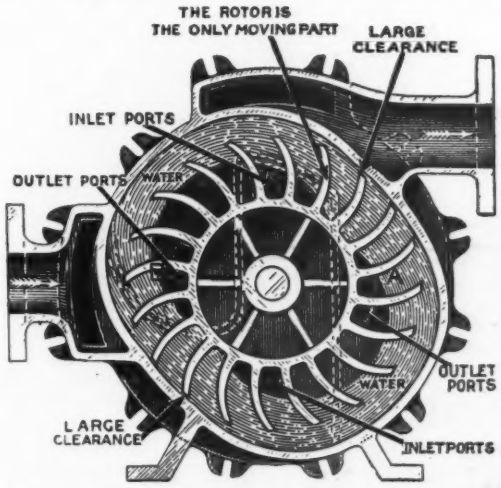

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mill power plants, but where all of the exhaust steam is needed for heating and processing systems or where most of it is needed, the condenser would prove to be uneconomical.

The Bleeder Type Turbine

In paper mills where low pressure steam is used for heating, drying, etc., the bleeder type of turbine is of considerable value. In the bleeder type this low pressure steam is taken directly from the turbine, but not until it has first done a great share of the turbine's work in producing mechanical or electrical energy. Steam for low pressure use can be taken directly from high pressure pipe lines through a reducing valve, true enough, but after passing through the valve it doesn't contain much more heat per pound than if taken from the turbine after it has done some mechanical good.

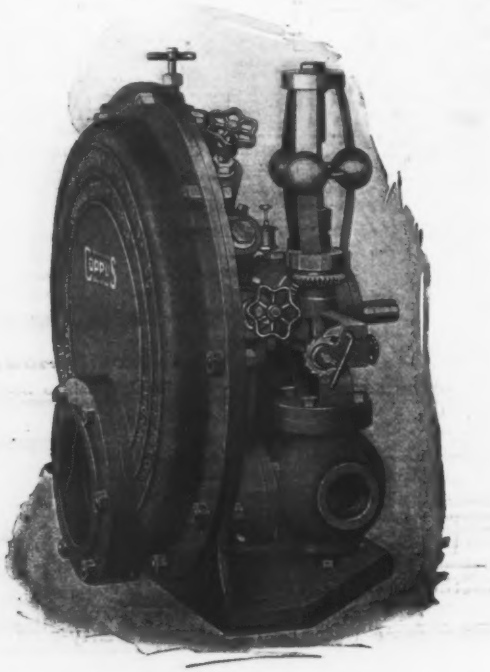

FIG. 3

Small steam turbine suitable for driving auxiliaries in paper mills—pulp grinders, fans, blowers, pumps, etc. Shaft mounted on ball bearings. For belt or direct drive. Speeds vary from 1,000 r.p.m. upward. (Courtesy Coppus Engineering and Equipment Company, Worcester, Mass.)

Sometimes, again, engineers first run the steam through a non-condensing engine, and the exhaust is used for heating, drying, etc. This is better than to do away with the engine entirely, and it is sometimes difficult to improve upon, especially where all of the exhaust steam can be utilized.

Reciprocating Engine and Turbine Combination

Sometimes where additional power is required, but where additional steam heat is not required, it is difficult to find anything better than an "exhaust steam turbine"; that is, a turbine that will run on the exhaust from a non-condensing reciprocating engine.

Let us suppose that you have a non-condensing reciprocating engine in your plant, that the steam is going to waste, and that the mill has grown to such an extent that more power must be produced. This can be done by installing a larger or additional engine, but that would be expensive because it probably would require additional boiler capacity, perhaps involving expense for enlarging the power plant building and materially increasing labor and upkeep cost. Seldom can more than 20 per cent of the new expenditure be netted from the sale of the old apparatus, considering installation costs, etc. Further, the additional power requirements, unless the increase is considerably larger, will seldom warrant a large expenditure. "Well," you may say, "why not run the old reciprocating engine condensing?" It is well to consider that point. You might get a little more power out of the engine that way, true enough, but no engine, either simple or compound, even when running condensing at the most economical point of cut-off, and otherwise under the best conditions, can deliver more than 20 to 25 per cent more power when running non-condensing. The increase obtainable and practical will hardly be greater with a compound than with a simple engine and in either case the change may subject the engine to a constant load greater than that for which it was designed. Where this is true, the overload is in time bound to prove injurious and the economy improvement and power increase are partially counter-balanced by deterioration of the unit.

A more logical procedure and one which prominent power plants have commonly practiced, is that of utilizing reciprocating engines during the first stages of expansion of the steam, and then leading the exhaust to low pressure turbines, which capably handle the steam during the remaining stages of expansion. In this way it is sometimes possible to almost double the amount of power previously secured without increasing the duty on the engine and without using more steam than before. And the initial cost of the turbine and condenser may be less than would be the additional cost of boiler and engine capacity.

These low pressure turbines exhaust into vacuums of from 24 to 30 inches. High vacuums are maintained by use of regular air pump condenser equipment, steam jet air pumps, turbo-air pumps, or jet condensers, much depending upon the quantity and cost of water available for condensing. For the smaller sizes the ordinary jet condenser, maintaining 24 to 26 inches of vacuum may be used with satisfaction. Turbo air pumps maintain higher vacuums—up to 29 inches and sometimes more. In large turbine units condensing apparatus maintaining a high vacuum will often be justified. This is a point that cannot be easily decided offhand, but it is worth looking into carefully. In general, the steam economy of a simple engine and exhaust steam turbine together is always an improvement over that which would be obtained by compounding the steam engine and adding a condenser. The plant capacity is frequently increased from 50 to almost 100 per cent by putting an exhaust turbine and condenser on a non-condensing engine. The turbine and condenser go into very small space, much less than the engine on which they generally operate. And as the combination takes the same quantity of steam as would the engine alone, and under the same conditions as before, without additional expenditure for boilers, chimneys, draft, coal handling apparatus, buildings, and steam piping, it is plain that such a change might be more economical than any other change. The turbine and condenser, or turbine alone in a condensing plant, can be cut into the exhaust line from the engine without interfering in any way with the operation of the engine, and usually without otherwise altering the layout of the plant.

Small Steam Turbines

There are a number of small steam turbines on the market suitable for connecting to pulp grinders, centrifugal pumps, fans, blowers, etc. These small turbines may often be installed to advantage in the paper mill plant. They are made to operate with steam pressure varying from 50 to 300 pounds per square inch with or without superheat, and either condensing or non-condensing. They will develop as little as two horsepower and as much as 400 horsepower and operate at speeds of from 1,000 to 5,000 r. p. m.

Take, for example, one of these small turbines now on the market. It is equipped with two ball bearings which carry the shaft of the turbine, these bearings being mounted in the same bearing bushing. They are supplied with oil by one oil ring. An occasional replenishing of the oil is all that is required. There are no stuffing boxes that need attention. This simplicity of construction, of

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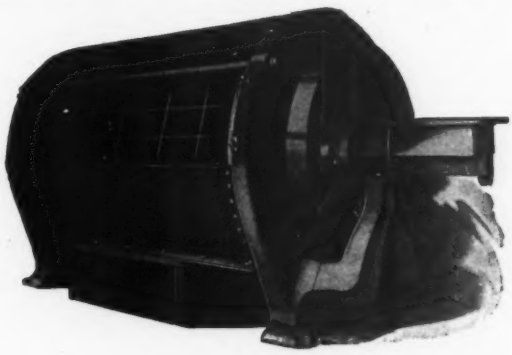

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Also, to show how carefully alignment problems have been worked out, it is well known amongst steam turbine engineers that misalignment with the driven unit is usually caused by pipe strains or by heat expansion of the turbine casing. Both the live steam and exhaust pipe connection of this small turbine are located near the bottom and thus near the supporting structure, eliminating the possibility of distortion due to pipe strain. The turbine casing is

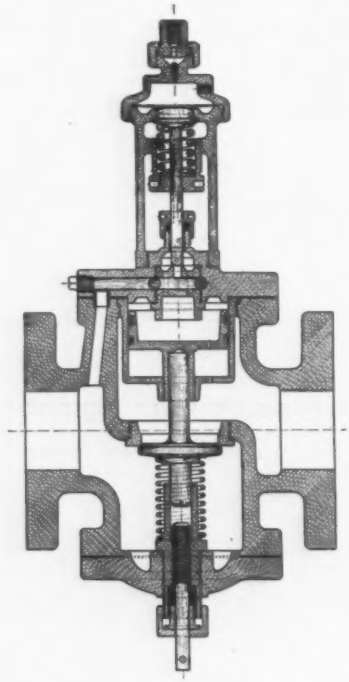

FIG. 4

Auxiliary operated reducing valve particularly suited for "dead end" service or where very close regulation is desired. (Courtesy Atlas Valve Company, Newark, N. J.)

subjected to exhaust temperature only as the high pressure steam is confined to a small annular chamber and it is claimed that the slight heat expansion does not affect the alignment.

Governor troubles were formerly experienced due to high speed, because the governors were mounted directly on the turbine shaft. In this turbine it is claimed that the trouble is entirely eliminated by the use of a constant speed governor geared down from the turbine shaft. Its slow speed gives a longer travel of the value for a given variation and thus more stable regulation, unaffected by wear.

In the design of the turbine blading and nozzles in this small turbine, modern scientific practice has been followed and the efficiency of the turbine proper is said to be unusually high. Besides, this little turbine has an additional distinct advantage over even the larger turbines, resulting in higher steam economy on account of the elimination of stuffing boxes. Stuffing boxes are generally considered a necessary evil. In connection with a high speed engine, there is all the more reason why such boxes should be avoided. If stuffing boxes are tight their friction on the shaft greatly reduces the efficiency of the machine, to be sure. This is far more detrimental and wasteful than is generally understood. If a shaft turns freely by hand everybody is satisfied, but those who have tested high speed machines realize that the least amount of friction on a high speed machine acts like a brake on a slow running machine.

It is a well known fact, also, that a shaft supported by two bearings is subject to violent vibration when it runs at a certain speed corresponding with its own vibration or wave frequency. This speed is called the "critical speed." The shorter the span between the bearings, and the larger the shaft diameter, the higher the critical speed. These small steam turbines, due to their very smallness as well as ruggedness of design, have the critical speed far in excess of the highest operating speed. It is always advisable for the customer to ascertain from the manufacturer the critical speed before purchasing any steam turbine.

How to Make the Purchase

About the best way to buy power and other machinery is to first write out all power plant and paper mill conditions in detail that would affect or might be affected by the new machinery. The more the manufacturer knows about the plant, the more accurate will be his figures and recommendations. A sketch or sketches should be made, preferably to scale, showing the present arrangement and giving the principal dimensions, and what the new machinery is to accomplish should be explained.

When this is done it will be unnecessary for the manufacturer to write letter after letter in order to get details. He will appreciate your efforts, will know that "sales arguments" will not help him much and that he is dealing with a mill official who knows what he wants and who wants "figures," not arguments. Let this matter be sent to the manufacturer with a stamped return envelope with a request for its return so that it can be sent to competing firms. Or, better, let several copies be made of the sketches and instructions, so that each manufacturer may keep his set and all may then work simultaneously on the proposition for a new or additional installation. It should be insisted, of course, that the new machinery must do the maximum work, year in and year out, for each dollar invested. The manufacturer should be asked to use plain, understandable words in his recommendations and guarantees. Nothing should be accepted that is not fully understood and there should be no hesitation about inquiring into the why and wherefore of every little detail of things that are not perfectly clear. This will usually prevent future sorrow or distrust.

Neither should there be any backwardness about requiring guarantees under bond. That the manufacturer is reliable and well established should be determined at the outset. New honest firms will be glad to be investigated thoroughly.

In this way the purchaser does not specify the machinery himself. The manufacturer does the specifying or recommending. The problem is virtually put "up to him," which is logical, because all wide-awake manufacturers are well versed in power plant machinery and will do as much for their customers as possible. It is not uncommon for a firm to "turn down orders" and recommend competing apparatus. They would rather do this than have their own machinery fail to do better work than would their competitors. Having received conditions in detail each manufacturer can tell quite accurately whether or not his machinery will be best and the purchaser will reap the benefit.

What to Tell the Manufacturer

It is almost impossible to give the manufacturer too much information when he is asked to make a quotation. Give the normal horsepower developed by your plant at the present time. What kind of power are you now using, steam engine, or steam turbine, etc.? Are you operating condensing or non-condensing? Is the load constant? If not, state variations. How much steam is used for heating, drying, etc.? What steam pressures are used for heat-

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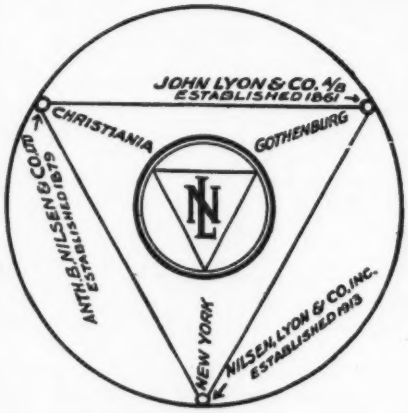

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ing, drying, etc.? Give details regarding the low pressure steam using units. If you have a typical load curve it will be helpful to the manufacturers. If you are operating condensing state the vacuum in inches. How much, if any, additional horsepower do you wish to develop? Or do you simply want more economical operation? If the turbine is wanted for driving a generator or alternator, state size and voltage and whether the electrical unit must be paralleled with others. Also, whether current is direct or alternating? If alternating, give the number of phases, cycles, voltages, etc. Do you expect to utilize any of the present power plant equipment? Tell the manufacturer what your own opinion is, if you have one, regarding alterations that should be made.

Some manufacturers make steam turbines only, but are willing to furnish the unit complete—with generator, exciter, switchboard, etc. Be sure to state whether or not a complete unit is desired.

Whether or not a steam turbine or turbines will be the most economical and best installation in your mill can be determined with certainty beforehand. With the present knowledge of the turbine there is little excuse for "trial installations," excepting on rare occasions.

In selecting an oil purification system for the paper mill, whether for use in connection with the steam turbine or otherwise, preference should be given to the plain continuous system and the continuous bypass system, as these are the most effective methods. Whatever method is used the impurities should be continuously removed because the impurities cause the emulsification, sludging, and acidity which results in rapid deterioration of the oil.

Steam Reducing Valves

Where all low pressure steam for heating and similar purposes used in the paper mill does not come from one or more bleeder turbines or from the exhaust of non-condensing turbines or engines, where some of the steam or the major portion of it must come from high pressure or medium pressure steam, it is common and good engineering practice to use high grade reducing valves for reducing the pressure down to the required pressure.

Although steam reducing valves are to be found in nearly every paper mill as well as in nearly every industrial plant where steam is used for heating, and although reducing valves are an important economy factor as regards first cost of valves, piping and pipe connections, upkeep cost, dependability, and perfection of performance, yet, it is a fact that very little has been written or printed about the real science of reducing valves and how they should be selected.

This lack of attention to reducing valves is probably due to the belief by most engineers and officials that "all reducing valves are alike, that one valve is as economical as another, and that nothing is to be gained by giving the matter careful consideration because of its relatively small importance when compared with the larger apparatus in the power plant."

Such reasoning, however, is unsound. The big and really important things are made up of a great many little things. To simply install an efficient steam turbine and boiler, for example, is not enough. Efficient large apparatus is commendable, to be sure, but one should not rest there. The hundreds of "little losses," added together, usually amount to more than the savings that can possibly be brought about by the most efficient turbine and boiler combination obtainable. The reducing valve, therefore, should by all means be taken seriously.

The types of steam reducing valves from which a paper mill official may make his selection are few in number. This may not sound true, but it is a fact that there are only two types of reducing valves on the market that vary in principle. There are, of course, a great many different designs in which the materials used and the construction vary, but the basic working principles are practically the same in most cases. Taken altogether one can readily divide them all into two classes.

The first class which was the original type and has changed but little since the days of Watt, is the diaphragm or piston type. This type is by far the simplest of the two, for it consists of only two moving parts, the diaphragm or piston which is affected by the pressure to be controlled and the valve which restricts or cuts off the flow of steam from the initial pressure side to the reduced pressure side of the valve.

The valve which employs a diaphragm for its operation is best suited for low pressures, as the diaphragm area can be made very large, compared to the size of the valve, without materially increasing its cost. On account of the large area of this diaphragm, the valve will respond to the slightest change in pressure.

Diaphragms are usually made of rubber or phosphor bronze. The rubber diaphragm has the advantage of greater flexibility, which permits a greater travel of the valve stem. Where protected by a water leg so that the steam does not come in direct contact with the rubber, such a diaphragm will give good service for a number of years. The phosphor bronze diaphragm is limited in flexibility, but has an advantage over rubber in not being so easily affected by heat.

Valves that employ a piston for their operation are not suited for extremely low pressures, nor are they suitable where any degree of tightness is required. Their advantage lies principally in the fact that they cost less to make and consequently they can be sold at a lower price. They are good enough for service above 5 pounds where there is always some circulation through the valve.

The type of valve that is used in the diaphragm or piston controlled valve is either the double bevelled disc type or the sliding piston type. The double bevelled disc type has the advantage of being tighter than the sliding piston type with the disadvantage of being affected by variations in the initial pressure on account of the seats being out of balance—as one disc must always be of greater diameter than the other. On the other hand, although the sliding piston type is perfectly balanced, no one as yet has been able to produce a commercial valve of this type that is, or is even "nearly" tight. The use for the sliding piston type of reducing valve is therefore limited to service where there is no objection to a continuous flow of steam of considerable volume through the valve. In fact, neither the double disc nor the sliding piston type of valve can be made tight enough for what is termed dead end service, that is, where the valve discharges into a dead end, so that the slightest leak through the valve will result in the pressure on the reduced pressure side equaling the initial pressure.

Both the diaphragm operated and the piston operated types of valves are adjusted by means of a weighted lever or an adjustable spring for low pressure or vacuum heating work. The weighted lever is the method used mostly, but for higher pressures on account of the number of adjusting weights required, the adjustable spring has the advantage of using less space and places considerably less strain on the valve and connections.

As the demand for steam at higher pressures increased, and as the requirements became more exacting, it was found that the old type of reducing valve would not do. Thus a natural demand was created for a different type of valve. This resulted in the auxiliary operated type, that is, a valve with an auxiliary or "pilot valve," which by means of a piston operates the main valve. The reason why this type of valve is superior in every respect to the old valve is easily explained.

The mechanism which controls the valve, usually a spring loaded diaphragm, must only handle by means of the pilot valve sufficient steam to operate the piston which in turn controls the main valve. As this volume of steam is very small, the slightest decrease in the controlled pressure is sufficient to move the diaphragm enough to supply full pressure to the valve piston, which causes the main valve to open wide, and the slightest increase shuts off the pressure to the piston which permits the main valve to close tight.

(*Continued on page 58*)

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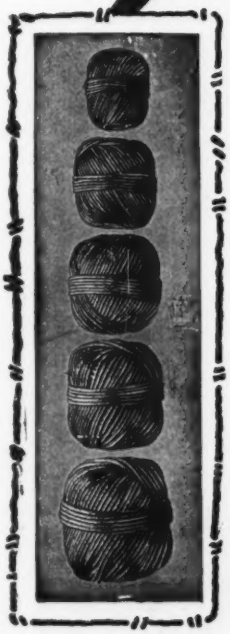

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CORDAGE

Editorial

Vol. LVVX New York, September 21, 1922 No. 12
FIFTY-FIRST YEAR

Paper Week in Chicago

Plans are rapidly being completed for the annual fall conference of the American Pulp and Paper Association at Chicago beginning the week of October 16. While the circumstances brought about by the war made it seem advisable to hold a fall meeting of those engaged in the various branches of the paper industry several years ago and while Chicago at that time seemed the logical place to hold this meeting, it was not then definitely determined to continue this annual fall conference. The success of the meeting, however, was so pronounced and Chicago as a meeting place seemed so acceptable to so many paper men that the fall conference may now almost certainly be looked on as a fixed institution in the paper business with Chicago as the regular meeting place.

While the settling of the coal strike and the approaching end of the railway strike is doing a great deal to clear up the business horizon, many problems of great interest still confront paper manufacturers and distributors which it cannot fail to be helpful to consider in a great convention of the entire industry such as is to be held at Chicago and already there is ample evidence that this year's conference will be the largest in point both of attendance and interest that has ever been held.

In addition to the general meeting of the American Paper and Pulp Association Thursday, October 19, and the joint meeting of the American Paper and Pulp Association and the National Paper Trade Association, interesting meetings of manufacturers' associations have already been arranged as follows:

TUESDAY, OCTOBER 17

Book Paper Manufacturers, 10:00 A. M.
Gummed Paper Manufacturers, 10:00 A. M.
Salesmen's Association, 10:00 A. M.
Waxed Paper Manufacturers, 10:00 A. M.
Woodlands Section, 10:00 A. M.
Cover Paper Manufacturers, 2:00 P. M.
Pulp Manufacturers, 2:00 P. M.
Salesmen's Association Banquet, 7:00 P. M.
Writing and Cover Paper Manufacturers, 7:00 P. M.

WEDNESDAY, OCTOBER 18

Vegetable Parchment Manufacturers, 10:00 A. M.
Writing Paper Manufacturers, 10:00 A. M.
Wrapping Paper Manufacturers, 10:30 A. M.
Cardboard Manufacturers, 2:00 P. M.
Toilet Paper Manufacturers, 2:00 P. M.
Tissue Paper Manufacturers, 7:00 P. M.

THURSDAY, OCTOBER 19

American Paper and Pulp Association, 10:30 A. M.
Joint Luncheon, Manufacturers and Merchants, 1:30 P. M.

Reduced rates under the certificate plan have again been secured for the meetings and as was the case in the Spring convention in New York, these rates will also apply to the members of the National Paper Trade Association.

Under this plan, it will be necessary for all those wishing the reduced rate to secure a certificate from the agent at their home stations, and to have this certificate validated by the railroad agent at Chicago, after Dr. Hugh P. Baker, Executive Secretary of the American Paper and Pulp Association has signed the certificate.

It was figured that at the spring conventions this reduced rate service saved the paper industry nearly $5,000 in railroad fare. To secure the rates, however, the railroads insist that the convention visitors secure certificates, and have them properly validated. Otherwise the interstate commerce laws do not permit the granting of the reduced fare. A special circular outlining the procedure is being prepared by the American Paper and Pulp Association for the benefit of those wishing to take advantage of the reduction.

Those who expect to attend the conference should make their hotel reservations at the earliest possible moment because, judging from experiences in the past, inconveniences are likely to be experienced if this important matter is deferred too long.

Export Outlook More Encouraging

The Paper Division of the Department of Commerce, after carefully analyzing the situation, is of the impression that the paper industry in the United States is on the way toward a rapid recovery after the extreme depression which has prevailed since the latter part of 1920. Although it is unlikely that either production or exports during the current year will reach the volume attained in 1919 or 1920, present indications are that they will in most cases greatly exceed those of 1921.

From the standpoint of exports, the outlook is perhaps most encouraging for manufacturers of news print and wrapping papers. Shipments of the former, which in 1921 amounted to only 16,812 tons, or only 1.4 per cent of the total production, have during the first half of 1922 reached 14,987 tons, or 2.3 per cent of the total production. This is not so good a showing as in 1920, or even in 1913, when export of news print amounted to 3 per cent and 3.8 per cent, respectively, of the amount manufactured, but it indicates that the foreign trade of the United States in news print is improving. The export trade in wrapping papers on the whole makes even a better showing than in news print, shipments during 1922 equaling 2.3 per cent of production, as compared with 1.8 per cent in 1921 and 0.8 per cent in 1913. During the peak year, 1920, exports of this product reached 3.7 per cent of the total manufacture.

Book paper and paper board have apparently suffered the most severely from the recent slump in trade. Although there has been an increase in production during the first half of this year, as compared with a similar period in 1921, this improvement is not reflected in the export trade. Shipments of book paper have fallen to 1.5 per cent of production; this equals the proportion shipped in 1913, but is considerably less than that for 1921, which amounted to 3.7 per cent, and is an even greater decline under the 1920 figure, which

reached 4.2 per cent. Statistics covering the quantity of paper board exported are not available prior to 1922, and, in view of the decline in prices that has taken place, it is not possible to determine accurately just how the expert trade in this product stands. Shipments for the first half of 1922 amounted to 11,879 tons, ar 1.2 per cent of the total production.

Canada Gaining on Us in Paper Production

WASHINGTON, D. C., September 18, 1922.—While the United States leads in the production of newsprint paper, the Canadian mills are growing rapidly, according to an analysis just made by the Paper Division of the Department of Commerce, and statistics show that there was a marked increase in production during the first six months of 1922 as compared with the corresponding period in 1921. Canada during the period January 1 to June 30, 1921, produced 373,988 tons as against 615,448 tons produced in the United States. In the corresponding period for 1922 Canada produced 516,506 tons as against 690,142 tons produced in the United States. This shows an increase of 38 per cent in Canadian production as against 12 per cent in American production. Canadian shipments for same period increased 43 per cent over the corresponding period in 1921, while shipments from American mills increased only 13 per cent. With these figures before us there can be no doubt about the growing competition from Canada. In the United States very little has been done in the way of additional equipment for the manufacture of newsprint, whereas in Canada, a number of the large mills have greatly increased their productive capacity, and, with one of the largest American producers opening a mill in Canada it would seem that eventually this large industry will be transferred to Canada.

"If this industry is to be kept alive in the United States," says the Paper Division, "the main problem confronting us is, without question, the supply of pulp wood. It would perhaps be impossible for anyone to make a definite statement as to our total resources, but we do know for a certainty that the supply in our Eastern and Lake states is inadequate. Thirty per cent of the news print manufacturing industry is in New England, approximately 50 per cent in New York, and 15 per cent in the Lake state regions, and in this district, as a whole, the annual cut of pulpwood greatly exceeds the forest growth. In other words, in this district we have mills without forests, whereas in the Western states and Alaska we have the forests with a practically unlimited supply without adequate production facilities. Cost of transportation prohibits bringing western pulpwood to eastern mills."

Clays for Paper Making in South Carolina

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 20, 1922.—The methods of mining and preparing white clays for market in the vicinity of Langley, S. C., are described by H. M. Weigel, mineral technologist, in a paper just issued by the United States Bureau of Mines. Langley is about nine miles north of Augusta, Ga. The clays mined in this district are sedimentary kaolins with few impurities. The prevailing color is white; at times the color is smoky grey or pink, and occasionally strong pink to lavender. The lighter colors usually become white on exposure to the air and on drying. The lower parts of the beds are usually the whitest. These kaolins are fine grained in texture and have good plasticity; their tensile strength is from 8 to 36 pounds. They generally slake readily. Their specific gravity is from 2.50 to 2.25. The clays in the district are well adapted for use in paper stock, for which they are mainly used, and in pottery and chinaware, without washing. In the district as a whole considerable reserves of clay are yet untouched, hence the industry can be considered fairly stable.

Paper Sales Show Downward Trend

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., September 18, 1922.—The chart just issued by the General Service Department of the American Writing Paper Company, showing the trend of printing sales and printers' paper purchases in the United States, is interesting and illuminating.

Combined with the curve indicating the trend of printing sales are curves showing approximate tonnage of paper purchased since January, 1918, and the relative amount of productive time in the printing industry for each month.

The figures for paper purchases and printing sales show a considerable dropping off from the high points reached in March and May of this year.

Undoubtedly, the rail and mine strikes have had an unsalutary effect on the printing industry, as on practically every other industry. To what extent the falling off in business, as shown by the chart, is actually due to these strikes can only be surmised, but it is reasonable to assume that under such conditions the average manufacturer or merchant starts to curtail his advertising, from which he sees no immediate return, though it is quite true that this, in many cases, is a mistaken policy.

Another factor to take into consideration is the natural falling off of business during the Summer months. It was hardly expected that this would be evident until July, but the case has been different this year.

It is very likely safe to predict that settlement of the strikes will be followed with a small business boom, the results of which will be amply reflected in the printing and paper businesses.

Since the chart is prepared from reports submitted by representative printing and lithographing concerns located in 39 states, the District of Columbia, and the Hawaiian Islands, thus occasioning delay in collating and computing, the June figure could not be brought out sooner than the latter part of August.

Fort Howard Paper Co. to Build

[FROM OUR REGULAR CORRESPONDENT.]

GREEN BAY, Wis., September 18, 1922.—Ground has been broken for the addition of 46,000 square feet of floor space to be added to the plant of the Fort Howard Paper Company of Green Bay. The new construction will take the form of a main building 100 x 100 feet and an ell 36 x 40 feet. All of the construction will run three stories in height.

The buildings will complete three units of construction originally decided upon by the company when its plant was projected in 1919 The first unit comprised the machine room, constructed to house two 120-inch trim paper machines.

The second unit started in 1920 provided floor space for the finishing department and the units now under construction will further enlarge the space required for finishing, storage and shipping.

With the new construction the company will have a total floor space of 110,000 square feet. The company is now producing twenty-five tons of genuine crepe, semi-crepe and plain tissue toilets: genuine crepe napkins flat and folded and towels in rolls and interfolded, daily.

Austin E. Cofrin has been general manager of the plant since its organization with Emil J. Hansen in charge of sales.

S. D. Warren Co. Raises Wages

[FROM OUR REGULAR CORRESPONDENT]

WESTBROOK, Me., September 19, 1922.—A wage increase of approximately three cents an hour for the employees of the paper mills of the S. D. Warren Company was announced this week. Two thousand workers are affected. The mills, which had been operating on short time for more than a year, have been on full time the past two weeks.

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TRENTON, N. J.

Section of the

Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G.MacNAUGHTON, Secretary

ABSTRACTS OF PAPERS BEFORE CELLULOSE SECTION

The following are abstracts of papers presented before the meeting of the Cellulose Section of the American Chemical Society at Pittsburgh, Pa., recently:

Change of Viscosity in Viscose

By W. F. Henderson

Linters were treated with increasing concentrations of nitric acid under uniform conditions and afterwards the samples were washed and dried. These products were converted into viscose under exactly similar conditions and the viscosities of the solutions were measured. A very sudden drop in viscosity was noted as is indicated by a curve which is to be shown.

New Methods for Measuring the Effects of Temperature and Humidity on the Dimensions of Paper

By Harold S. Davis

Where paper is used for printing purposes, its expansion or contraction between imprints may cause blurring. It is, therefore, of great importance to have a knowledgeof the magnitude of the changes in dimension and of the rates at which they take place.

A new apparatusis described in which the humidity and temperature are susceptible to easy control in which the changes in dimensions of different samples of paper may be accurately measured.

Copper Numbers of Cotton Linters

By W. F. Henderson

A brief description of the source and properties of the material used is given. Samples were treated with various kinds of acids of increasing concentrations, and after washing and drying, the copper numbers of the linters were determined. In the cases of strong acids a rapid increase was noted in the copper values, but in the cases of weak acids very little change occurred. Alkalies were used in the same manner and while the absorptive power of the linters increased, the reducing power remained practically constant. Curves are shown for each series of determination.

Chemistry of Wood—VI. Results of Analysis of Heartwood and Sapwood of Some American Species

By G. J. Ritter and L. C. Fleck

The comparative chemical composition of heartwood and sapwood of ten American species is given in the paper. The results show that, in general, the cellulose and the lignin are higher in the sapwood of the conifers, but that these same constants are higher in the heartwood of the deciduous species. The higher yields of cellulose and lignin in the sapwood or in the heartwood of a given species are accompanied by lower yields in extractives.

Adsorption of Salts by Cellulose

By Wilder D. Bancroft

Though they merge one into another, we can consider four cases: miscellaneous salts; bases and acids; mordants; substantive dyes.

1. We get a water-ring in filter paper with salts of copper, lead, mercury, etc. We get peptization of cotton by ammoniacal copper oxide, zinc chloride, barium iodide, etc.

2. Barium, strontium, calcium, and lead hydroxides may be adsorbed so strongly by filter paper from dilute solutions as to introduce analytical errors. In mercerization, caustic soda is adsorbed and changes the structure of the cotton; but no compound is formed. Mineral acids show no appreciable adsorption at moderate concentrations by titration methods.

3. Cotton takes up alumina and chromic oxide only from colloidal solutions. In presence of tannin alum is decomposed. Tannin is adsorbed; but must be fixed by antimony, because it is peptized so readily by basis dyes.

4. Sodium and barium salts of substantive dyes are adsorbed as such. Being colloidal solutions the adsorption is increased by electrolytes which decrease the stability; and is decreased when these electrolytes coagulate the dye.

Factors Influencing the Properties of Wood Cellulose as Isolated by the Chlorination Method

By Mark W. Bray and T. M. Andrews

Certain series of pulps made by keeping all cooking conditions as constant as possible except time, gave values for alpha, beta and gamma cellulose that did not lie in proper relation to each other. Unless the chlorination conditions are uniform in the preparation of cellulose from these pulps the character of the celluose is effected. Therefore, a study was undertaken of the conditions which effect the character of the cellulose as expressed in the per cent alpha, beta and gamma cellulose.

It was found that increasing the temperature and time of chlorination (over-chlorination) increases the percentage of non-resistant cellulose in cellulose derived by the Cross and Bevan method.

There is very little beta cellulose in pulps or wood before it is chlorinated for the preparation of cellulose, except in decayed mate-

XUM

rial. The action of the organisms of decay in most cases is similar to that of chlorination on the character of cellulose.

The copper number of cellulose is a measure of the resistance of cellulose toward 17.5 per cent sodium hydroxide solution, and also of the amount of over-chlorination. The data indicates that beta and gamma cellulose have the same copper number.

$$\frac{\text{The ratio, copper number of the cellulose}}{\text{per cent beta and gamma cellulose}} = \text{constant.}$$

From the relation of the copper reduction capacity of beta and gamma cellulose, the data indicate that within every three $C_6H_{10}O_5$ complexes there is one aldehyde group.

An Improved Method for the Determination of Alpha, Beta and Gamma Cellulose

By Mark W. Bray and T. M. Andrews

A volumetric method for the determination of alpha, beta and gamma cellulose based upon the titration of the organic material in Cross and Bevan cellulose has been worked out. The separation of the resistant from the non-resistant cellulose is carried out by treatment with 17.5 per cent NaOH, filtered by suction or centrifuged and washed. The alpha cellulose is dissolved in 72 per cent H_2SO_4 made up to 100cc. in a graduated flask, an aliquot of which is oxidized with standard $K_2Cr_2O_7$ solution; the excess $K_2Cr_2O_7$ is titrated with ferrous-ammonium sulphate solution. The alkaline filtrate is divided into two equal portions. One portion is acidified with dilute H_2SO_4 causing the beta cellulose to precipitate. An aliquot of the clear solution is oxidized as in the alpha cellulose determination for the estimation of gamma cellulose. The other portion of the alkaline filtrate is used for determining beta plus gamma cellulose. The value for beta cellulose is arrived at by subtracting the result of the gamma cellulose determination from that of the beta and gamma determination.

The volumetric method gives a direct means for the estimation of these three constants, in determining the character of the cellulose. Filtration and washing difficulties of the gravimetric determination are practically overcome. This method is more accurate and can be carried out much more rapidly than the gravimetric method of Cross and Bevan. Check determinations can be made without repeating the Cross and Bevan determination for preparing cellulose, which procedure is necessary in the gravimetric method.

The Gelatinization of Lignocelluloses

By A. W. Schorger

It has been found that lignocelluloses when ground in dilute alkaline solutions attain a high degree of dispersion. The resulting gelatinous product when allowed to dry forms, without pressure, a dense, horny mass having a specific gravity of 1.4—1.5, which is three to five times greater than the apparent specific gravity of the original wood. The peptonizing action of alkali is particularly marked in the case of the hardwoods in comparison with the conifers, the difference being apparently due to the greater hemicellulose content of the former. The cereal straws gelatinize even more readily than woods by the above treatment.

A Study of the Methoxyl Distribution in the Products of the Soda Cook of Jack Pine (Pinus Divaricata)

By S. S. Aiyar

This paper is a continuation of the work on the distribution of methoxyl in the products of wood distillation previously reported. As the period of cook is lengthened the methoxyl in the pulp gradually falls to a minimum after two haurs' cook at maximum pressure. Thereafter the loss of methoxyl is not very appreciable.

The liquor in its turn gains the methoxyl corresponding to the loss in the pulp so that all the methoxyl in the wood used is found in the products at the end.

The volatile methoxyl derivatives in the liquor reach a maximum in half an hour after attaining maximum pressure and then their quantity falls. There seems to be a reversal of the equilibrium as the strength of caustic falls and more woody matter is dissolved in the lye.

Mannose from White Spruce Cellulose

By E. C. Sherrard

When white spruce wood is hydrolyzed with dilute acid at atmospheric pressure the quantity of cellulose removed corresponds to the quantity of sugar produced. Since no mannan can be isolated from the wood by the usual methods the mannose is probably present as a manno-cellulose and not in the adsorbed state. Otherwise, it is difficult to advance an explanation of the removal of a quantity of cellulose corresponding to the sugars produced.

The paper directs attention to the presence of mannose as a product of the hydrolysis of white spruce cellulose and also to the fact that this sugar is distributed through the alpha, beta and gamma celluloses. While the mannose is quite easily removed by means of dilute acids a part of it withstands the action of alkali and is even found in cellulose reprecipitated from zinc chloride—hydrochloric or cuprammonium solutions.

Experimental Work on the Development of a Theory of the Protection of Wood by Preservatives

By E. Bateman and C. Henningsen

Practical methods of preserving wood against the attack of low forms of life require the injection of some material which either inhibits or kills the attacking organism.

A working hypothesis on the protection of wood by preservatives is proposed. It states that wood preservative must possess sufficient solubility in water to produce a solution of lethal concentration. When injected into wood as an oil solution, the active ingredients are distributed in the ratio of their solubilities in water and oil.

The paper, which includes new data on the solubilities, solubility coefficient, and toxicity of mono-hydric phenols, offers experimental proof of the theory.

Notes on the Rosin-Sizing of Paper I. The Reactions Between Aluminum Sulphate and Sodium Resinate (Rosin Size) Solutions

By Alfred Tingle

The experimental results obtained may be summarized as follows:

When solutions of these compounds are mixed in stoichiometrical proportions, precipitation of alumina and rosin is complete. When a considerable excess of aluminium sulphate is used the precipitate contains no resinate but consists of free rosin acids with less than their equivalent of free alumina. At certain concentrations all the alumina remains in solution, rosin acids only being precipitated. Rosin acids precipitated in this way ("Rosin B") are not in the same physical condition as when precipitated by mineral acids. Addition of mineral acids to this modification of rosin changes it to the more common form ("Rosin A"). "Rosin B" is probably spongy rosin very thoroughly interpenetrated with water.

Notes on the Rosin-Sizing of Paper II. The Process in the Beating Engine and at the Wet End of the Paper Machine

By Alfred Tingle

As commonly carried out the reaction in the beater results in the deposition of rosin in the form of "Rosin B" (see preceding paper) on the fiber with less than its equivalent of alumina. Most or all of the remaining free alumina is precipitated as the result of subsequent dilution. That alumina plays no essential part in the sizing is shown by the fact that paper can be successfully sized under such conditions that no alumina can be deposited. Rosin acids can be precipitated even by sulphuric acid in a condition closely resembling "Rosin B" if at the same time another precipitate is formed which will serve to keep the rosin finely divided. In such circumstances the rosin has sizing power. Investigation of the changes in size as paper dries are required.

Fall Meeting of the Technical Association

HOTEL WOLVERINE, DETROIT, MICHIGAN

Monday and Tuesday, October 9 and 10, 1922

PROGRAM

Monday, 9.30 a. m. Business Session.

GEO. E. WILLIAMSON, Chairman, Amendments to the Constitution, Reports of Committes, General Business.

Monday, 12 m. Executive Committee Luncheon.

Luncheon meetings of other committees as arranged by the chairmen.

Monday, 2 p. m. Waste in the Industry.

R. B. WOLF, Chairman, G. D. BEARCE, Vice-Chairman, Mill Effluent and Material Recovery, Barking Drum Refuse.

Monday, 7.30 p. m. Association Dinner in Hotel Wolverine. Tickets $5.

Tuesday, 9.30 a. m. Sectional Meetings.

Paper Testing, F. A. CURTIS, Chairman; Drying of Paper, F. C. CLARK, Chairman.

Tuesday, 2 p. m. Plant Visits as Arranged.

Invitations have been received from Detroit Sulphite Pulp and Paper Co., Port Huron Sulphite and Paper Co., Chemical Engineering Department, Ann Arbor.

TECHNICAL SECTION, PAGE 140

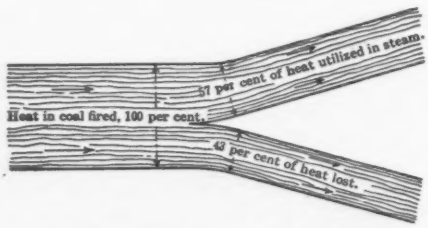
XUM

THE CO_2 RECORD OF COMBUSTION EFFICIENCY*

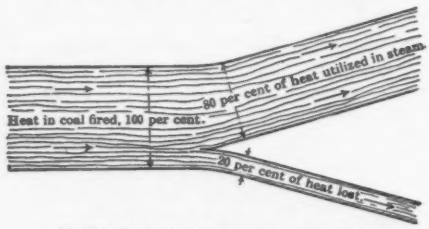
By Charles C. Phelps, Treasurer of Uehling Instrument Company, Paterson, N. J.

Chemical control of combustion is practiced in a large proportion of present day boiler plants with most profitable results. The greatest single factor in securing high boiler efficiency is the correct proportioning of the air supply to the fuel consumed. If the air supply is in excess of a furnace's requirements, there will be an increased loss of heat up the chimney, and the boiler's efficiency and capacity will be thereby decreased.

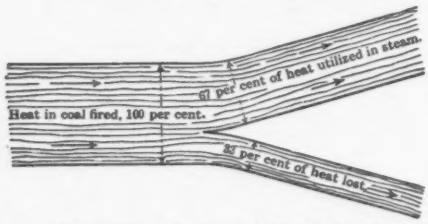
Fig. 1 shows the magnitude of the chimney loss in the average boiler plant. It will be noted that this invisible loss is surprisingly large in comparison with the very visible loss of unburnt coal and the very apparent radiation loss. This diagram is reproduced from Technical Paper No. 205 of the Bureau of Mines. It shows that only 57 per cent of the heat energy of coal is converted into useful steam energy in the average plant. This same result is also shown in the upper view of Fig. 2 reproduced from the same government bulletin and it is in decided contrast with the central view of the same illustration which shows that the best plants are averaging



A. **The average boiler plant does like this.**



B. **The best plants are doing like this.**



C. **The average plant can and should do like this.**

Fig. 1

Diagrams showing possible improvement in efficiency at average boiler plants.

80 per cent in operating efficiency. The Bureau of Mines states that the average plant can readily increase its efficiency at least 10 per cent with comparatively little effort, as shown by the lower view of Fig. 2. The big waste of fuel is up the chimney, as shown in Fig. 1, and of course it is by a reduction of this waste that the really worth while fuel savings can be made.

*Read at the meeting of the Technical Association of the Pulp and Paper Industry at the National Exposition of Chemical Industries, Grand Central Palace, New York, September 11-16, 1922.

Does Not Represent Large Fuel Loss

Smoke is often considered to be a serious loss, and while it may cause a tremendous loss of real estate values in the immediate neighborhood, it does not represent a large fuel loss. Quoting from Prog. George Gebhardt: "A smoky chimney does not neces-

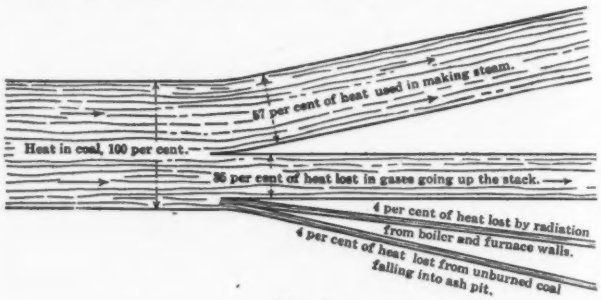

57 per cent of heat used in making steam.
Heat in coal, 100 per cent.
36 per cent of heat lost in gases going up the stack.
4 per cent of heat lost by radiation from boiler and furnace walls.
4 per cent of heat lost from unburned coal falling into ash pit.

Fig. 2

Where the heat goes in the average boiler plant.

sarily indicate an inefficient furnace, since the losses due to visible smoke generation seldom exceed one per cent; as a matter of fact a smoky chimney may be much more economical than one that is smokeless. That is to say, a furnace operating with minimum air supply may cause dense clouds of smoke and still give a higher evaporation than one made smokeless by a very large excess of air."

Likewise the loss due to incomplete combustion of gases from the fuel, such as carbon monoxide, hydrogen and hydro-carbons is usually not very large, probably not exceeding two per cent on the average.

The bulk of the chimney loss is in the form of sensible heat, that is heat that can be measured with proper appliances. The relative unimportance of the other minor loss components, namely smoke and unburned gases, is shown in a typical loss diagram, Fig. 3.

By measuring this sensible heat continuously we will know how much heat is being wasted up the chimney and we can then make changes and adjustments until this loss is the minimum.

Relative Weight and Temperature

Quantity of heat wasted up the chimney per pound of fuel burned is of course just as much dependent upon the *weight* of the hot gases as upon their temperature, therefore we must measure both

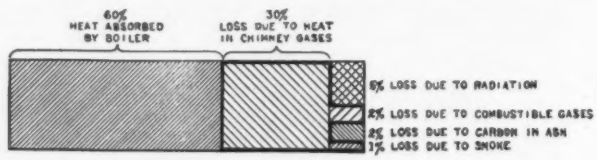

60% HEAT ABSORBED BY BOILER
30% LOSS DUE TO HEAT IN CHIMNEY GASES
6% LOSS DUE TO RADIATION
2% LOSS DUE TO COMBUSTIBLE GASES
2% LOSS DUE TO CARBON IN ASH
1% LOSS DUE TO SMOKE

Fig. 3

Chart showing what becomes of the total heat in the coal; 60 per cent is absorbed by the boiler; while almost all of the 40 per cent waste is due to the heat carried off up the chimney.

relative weight and temperature for a complete knowledge of chimney losses and we must strive to keep both weight and temperature as low as practicable. However, as the relative weight varies over wide limits, whereas the temperature does not change to such an extent, it is obvious that the measurement of relative weight is of paramount importance. The instrument for this purpose is known as CO_2 recorder.

To insure maximum boiler efficiency the fuel must be burned with minimum excess air compatible with complete combustion.

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To regulate the air and fuel supply and keep the fire in proper condition to maintain complete combustion with minimum excess air, the fireman must know all the time whether he is accomplishing this end.

Excess Air Supplied

The percentage of carbon dioxide (CO_2) is a true index of the percentage of excess air supplied, as shown by Fig. 4.

These curves show that for any fuel the percentage of CO_2 is almost exactly inversely proportional to the percentage of excess air. For example, in the lower curve for fuel oil, the maximum CO_2 is 15 per cent. This is for theoretical air supply, whereas the CO_2 percentage is approximately 7½ per cent when double the theoretical quantity of air is used.

Fig. 5 shows why this is so. It is based on pure carbon which is the principal constituent of all commercial fuels. In the process of combustion the carbon of the fuel unites with oxygen to produce the gas known as carbon dioxide. This carbon dioxide will occupy the same volume as the oxygen from which it was formed. As air consists of 21 per cent oxygen by volume, the CO_2 formed by *perfect* combustion of carbon would constitute 21 per cent of the volume of the resulting flue gases, as indicated by chart (a) Fig. 5. With double the theoretical air requirements the CO_2 percentage would be 10½ per cent as shown by chart (C) of the same figure.

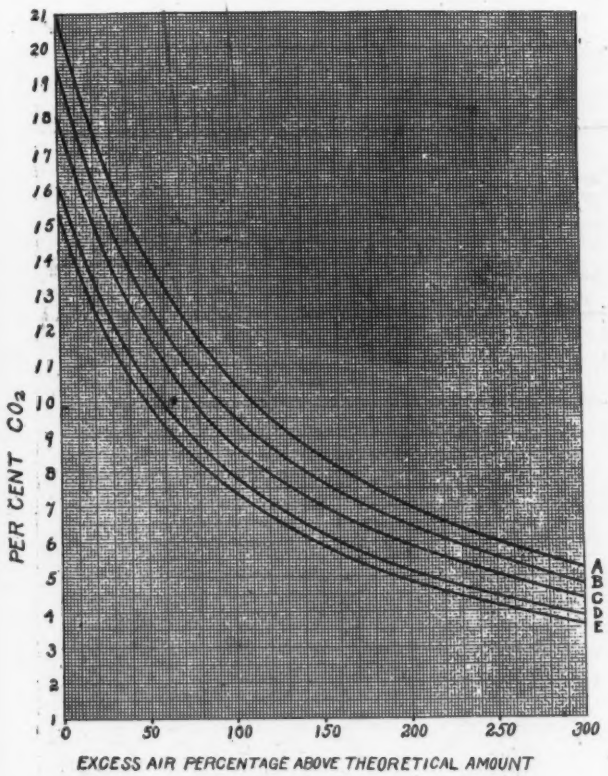

FIG. 4

Curve A Carbon.
Curve B Anthracite Coal.....Carbon-Hydrogen—Ratio 35
Curve C Bituminous Coal.....Carbon-Hydrogen—Ratio 15
Curve D Heavy Fuel Oil.....Carbon-Hydrogen—Ratio 8
Curve E Light Fuel Oil.....Carbon-Hydrogen—Ratio 6½

The actual amount of CO_2 from a pound of carbon would be the same in all cases but the *percentage* would vary as shown in Fig. 5.

The CO_2 Indicator before the fireman guides him in attending to his fires and in making proper adjustments so as to secure high combustion efficiency continuously, just as the steam gauge shows him whether he is maintaining the desired steam pressure.

High Furnace Temperature Important

High initial or furnace temperature is of great importance in boiler practice, not only as regards efficiency but above all as regards boiler capacity. If this temperature is not as high as conditions warrant, then some of the boiler's capacity will be sacrificed and fixed charges on the boiler will not be earning their oats. Low

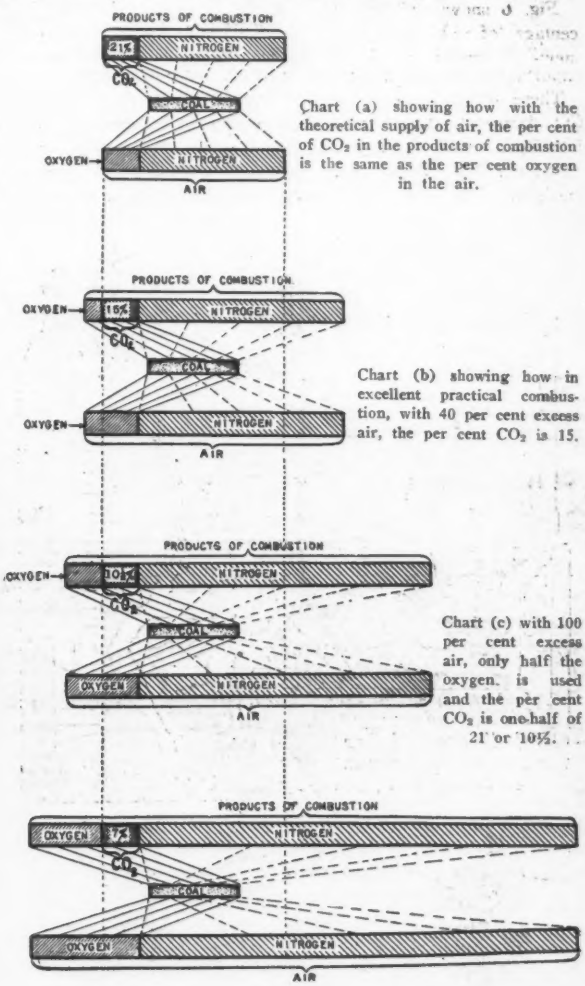

FIG. 5

Chart (d) with 200 per cent excess air, only one-third the oxygen supplied is needed and the per cent of CO_2 is one-third of 21 or 7 per cent.

CO_2 means a dilution of the hot gases of combustion with unnecessary cold air and a greatly reduced furnace temperature in consequence. Leaky settings and cracks in the doors and openings will permit enormous volumes of cold air to enter the furnace if there is suction within the combustion chamber. For this reason with natural draft it is better to regulate draft with the dampers rather than with ash pit doors, thereby reducing the suction over the fire to no more than is actually required. There are several devices in use today which do this automatically.

With high furnace temperature assured, the next step is to give the gases ample time to impart their heat to the heating surfaces of the boiler. Here again minimum volume of gases (high CO_2) works to our advantage because the less the volume of gases passing per unit of time obviously the less will be their velocity through the furnace. The time element is further taken care of by baffles which offer resistance to the flow of gases and actually

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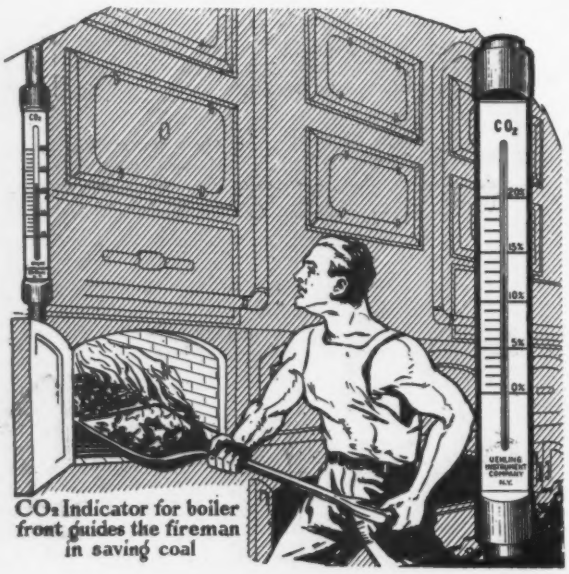
lengthen the path of the gases by diverting them back and forth. The transferance of heat is also greatly facilitated by having the heating surfaces free from soot and scale, both of which substances are poor conductors of heat.

Heat Lost up the Chimney

Fig. 6 shows the heat lost up the chimney for varying percentages of CO_2 from which the importance of controlling the air supply by means of the CO_2 recorder is seen to be of the utmost importance as a means for securing high boiler efficiency.

These losses increase at an accelerating rate as the percentage of CO_2 decreases. In other words, the gain by increasing CO_2 from 5 to 6 per cent is much greater than the gain obtained by increasing CO_2 from 12 to 13 per cent. Sometimes a plant that is admittedly inefficient will defer using CO_2 equipment until new boilers of more efficient design have been installed. The fallacy of such decisions is apparent when it is considered that the *percentage* of saving is likely to be even greater in the old plant than in the new. By similar reasoning it is obvious that for approximately the same *average* percentage of CO_2 recorded, the most uniform record always indicates the best combustion efficiency.

Fig. 7 shows a typical example of fuel saving in a small plant solely by increasing the CO_2 percentage.



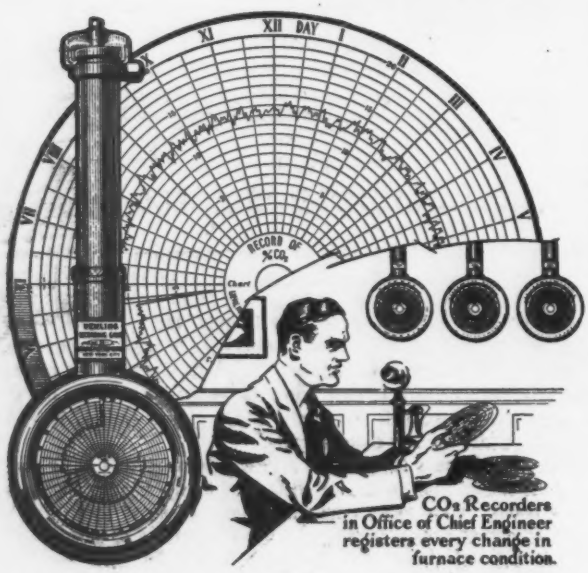


FIG. 8

Instruments for indicating and recording CO_2.

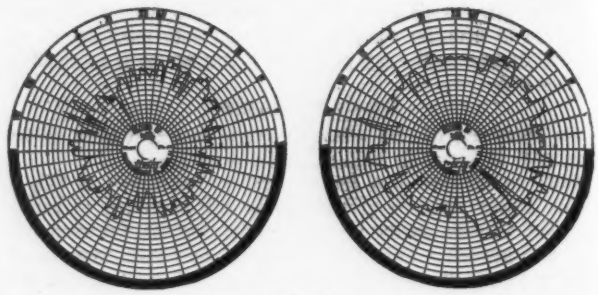


FIG. 7

Two CO_2 charts from a Uehling CO_2 meter installed in a New England plant. The chart at the left was obtained shortly after the installation of the machine, when the per cent CO_2 (as averaged from the chart) was 8.48% and coal consumption 11 tons per day. The second chart obtained a few weeks later shows 11.75% CO_2 and coal consumption was 10 tons per day.

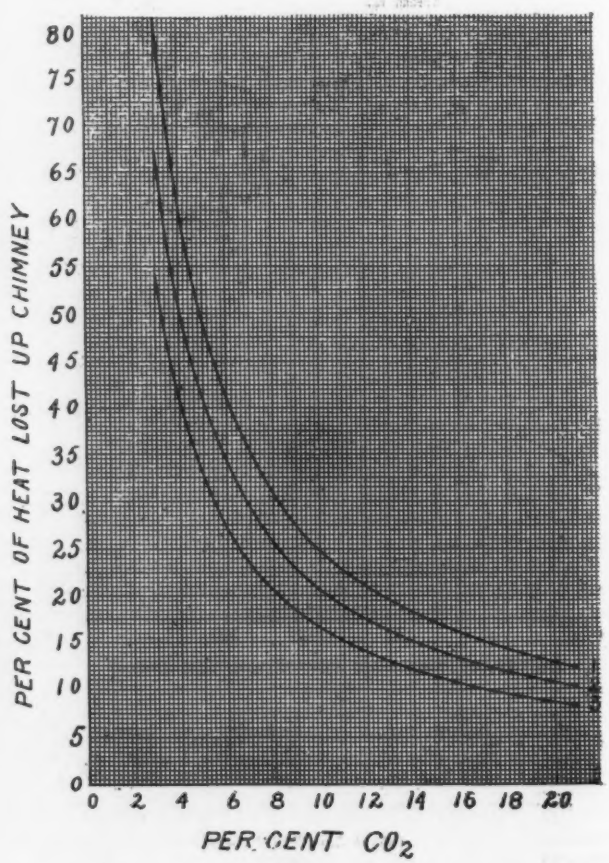


FIG. 6. (BASED ON CARBON)

Curve 1—Temperature 600 deg. F. above boiler room temperature.
Curve 2—Temperature 500 deg. F. above boiler room temperature.
Curve 3—Temperature 400 deg. F. above boiler room temperature.

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THE V-NOTCH METER AND ITS APPLICATION TO THE PAPER INDUSTRY*

By L. G. Chase, of the Yarnall-Waring Co.

Modern industry calls for the most careful checking of all process work. This is true of every branch of manufacturing and especially true in the making of pulp and paper. The old slipshod ways are no more. The writer well recalls sitting in the office of the manager of one of the large paper mills several years ago. This manager was examining a sheet of paper. He called in the superintendent, who was one of the old guard, and asked what was the matter with this particular sheet. The superintendent threw us his hands and said, "The Lord only knows." The reply he got was rather to the point: "The Lord may know, but I want to know, too." This illustrates the changed viewpoint.

A Brief History

The matter we wish to present is connected with the measurement of liquors used in the manufacture of pulp, namely, black soda liquor, as a check on soda recovery, and bleach liquor. This method is by means of the V-notch meter, and we believe a brief history of this device will prove interesting.

The ordinary type of weir is not accurate at low rates of flow, and approximately 50 years ago James Thompson, professor of civil engineering at Queens College, Belfast, attempted some tests on the flow of water over V-shaped notches. The experiments were conducted in an open field near Belfast and the apparatus used was, even for those times, very crude. However, Prof. Thompson was able by means of these experiments to derive a formula for the flow over the V-notch which was so accurate that all later experimenters have been able to do is to prove the truth of his original statement. These later tests were conducted by such eminent authorities as Dr. James Barr, Carnegie Research scholar at Glasgow; James E. Lea, the inventor of the Lea V-notch meter, and others. They were conducted in the most careful and painstaking manner, with the best of laboratory equipment, but they have not changed in any way the original formula derived by Prof. Thompson. This formula is as follows:

Q (in cubic feet per minute) is equal to .305 times H 5/2 (where H is the head on the notch in inches). This is for a full 90° V-notch.

This formula is really nothing more nor less than the area of the full 90° notch, which would be H^2, times the velocity of the liquid moving over the notch, which, of course, is equal to $\sqrt{2g.H}$. The friction constant due to contraction was found to be the same with a V-notch for all heads. Therefore, this constant combined with the square root of 2 g. in the formula worked out to be .305, a constant figure where Q is in cubic feet per minute, and H the head in inches.

For our modern recording apparatus used with the V-notch we are indebted to James E. Lea, and in his case, as is so often true, necessity was the mother of invention. About 20 years ago he was employed by a gold mining company in South Africa, and his particular duty for a considerable time was to take hook gauge readings every few minutes on a V-notch weir measuring water in process work. As the job was irksome, he set about to obtain some means by which he could get an automatic and continuous record of the flow. To do this he hit upon the novel scheme of suitably inscribing the 5/2 power of H with its proper constant on a cam, the cam being operated by means of a float riding on the surface of the still water in front of the weir. This float was rigidly connected in such a way as to operate the cam by means of a rack-and-pinion drive. The success of this invention was instantaneous, and is well attested by the fact that over 90 per cent of the thousands of V-notch meters in service today in all parts of the world and measuring all kinds of liquids are based on these patents.

For years the V-notch meter was pushed principally as a method of measuring boiler feed water and condensate in power plant service; but in recent times it has come rapidly to the fore as a method of measuring liquid chemicals of all descriptions. This is due to the fact that it is accurate at low rates of flow and that the parts in contact with the liquid can be made of materials not affected by the liquid to be measured. Caustic liquors, bleaching compounds, sulphuric and sulphurous acids, cyanide, sewage, and many other liquids are being easily handled by this means.

Where the V-Notch Meter Fits Best

In the paper mill the two places where the V-notch meter fits best are in checking the recovery of soda in the soda process and in measuring bleach liquor. In the measuring of soda recovery the meter is placed in what is called the middle stage, and the reclaimed liquor coming from the digesters is passed through it. By so placing the meter the amount lost in process and the losses due to leaks can be checked immediately, and the location of any unusual losses can be determined. In other words, with such a meter it is possible to keep a constant control over recovery. The temperature at which the liquor is measured is about 140° F. in the usual case, and at this temperature nothing adheres to the tank. A recent report on such a meter in operation states that the meter tank has been cleaned only once in two years and that the recorder requires very little attention. It is simply cleaned once every month and the moving parts oiled. Any workman can do this.

Prevention of Foaming

One point which has to be considered carefully, of course, when installing meters for this service is the proper location of connections to prevent foaming. All that is necessary to do in the case of caustic liquors is to be sure that the liquor line enters the meter tank near the bottom. Caustic liquor will not foam except when allowed to flow with a splashing action.

In handling bleaching liquors it is necessary, of course, to install the recorder parts in a suitably made, fume-proof case to prevent corrosion. These points are all taken care of by the manufacturers.

As to accuracy we have found in practice that the results obtained check well within one-half of one per cent, which is as good or better than any type of measuring device on the market today. Electrical recording instruments for switchboard service are not guaranteed to have an accuracy closer than one per cent.

For Paper Stock

Nothing to date, so far as we know, has been done in the measurement of paper stock with a V-notch meter, although it has been up for consideration a number of times. The point has always been made that there was little use for making this measurement unless a consistency record could be kept synchronously, or the consistency so controlled that the amount of actual wood fiber in solution was practically constant. Several consistency regulators of considerable merit are now on the market and there is no reason why a combination of such a regulator and a V-notch recorder cannot be used in making stock determinations with a high degree of accuracy where the consistency does not run over three per cent. This we understand is about the limit of consistency control at present time.

*Read at the meeting of the Technical Association of the Pulp and Paper Industry at the National Exposition of Chemical Industries, Grand Central Palace, New York, September 11-16, 1922.

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CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Properties, Chemistry and Testing of Raw Materials and Finished Product

Manufacturing of Aluminum Sulphate for Sizing Paper.—G. Muth. Can. Patent 220,381, July 4, 1922. Same as Fr. patent 515,314.—See this journal, lxxiv, No. 14, 50, April 6, 1922.—A. P.-C.

Manufacture of Cellulose Acetates.—J. O. Zdanowich. Can. patent 220,531, July 4, 1922. Same as English Patent 139,232 and U. S. A. Patent 1,347,801.—See this journal, lxxii, No. 23, 48, June 2, 1921.—A. P.-C.

Forestry

Portable Tree Felling Saw.—A. O. M. Lofgren, assignor to A. G. M. H. Djursholm and O. R. Gronkwist. Can. patent 220,181, June 27, 1922.—A band-saw is engaged in a frame which is made to stretch the saw and which is provided with deviating rollers over which the saw travels.—A. P.-C.

Portable Tree Saw.—G. H. Anson. Can. patent 221,202, July 25, 1922.—A. P.-C.

Combined Tree Feller and Log Saw Rig.—G. S. Abbott and F. Whitenack. Can. patent 217,706, April 11, 1922.—A. P.-C.

Wood Preparing and Equipment

Wall Board from Wood Waste.—H. F. Weiss assignor to Wood Conversion Co. Can. patent 220,477, July 4, 1922.—The board consists essentially of a filler and a binder, the former consisting of "fiber aggregates," e. g., sawdust, which has been ground or crushed between revolving discs, and the latter of "hydrated cellulose" consisting of a slimy gelatinous structureless mass obtained by repeatedly grinding saw mill waste (sawdust, hogged and chipped slabs, etc.) between revolving discs. The binder (at least 25%) and the filler (at least 30%) are mixed in suitable proportions in a mixing chest, sized and colored if required, delivered on a travelling canvas belt or conveyor, on which it is pressed in a hydraulic press, and finally dried, e. g., in a tunnel kiln. The finished product can be worked and finished practically in the same way as wood.—A. P.-C.

Groundwood Manufacturing and Equipment

Recovering Pulp from Pulp or Paper Mill Waste.—G. J. Manson. Can. patent 221,134, July 18, 1922.—The mixture of waste fibers and water is pumped through a thickener, water is added, and the mixture is passed through a knotter and a screen, the rejects being ground and returned to the system, and the good fibers being sent to a wet machine. (It is hard to see wherein lies the novelty!)—A. P.-C.

Wood Grinder.—P. Priem. Can. patent 219,733, June 20, 1922.—One large press is used per stone, the bearing plate (or pressure foot) being curved to the shape of the stone. A group of these grinders are driven from a single source of power, and a governor common to the whole group is used to properly distribute the power when charging any one of the presses.—A. P.-C.

Artificial Grinder Stone.—H. A. Rothchild, assignor to Kimberly-Clark Co. Can. patent 221,052, July 18, 1922.—One hundred parts of round-grained sand are thoroughly mixed with 10 parts of finely ground china clay and 10 to 23 parts of "liquid silicate of soda" are added. The mixture is poured into a mold, subjected to a pressure of 400 pounds per square inch (in a direction parallel to the axis of the stone), and the mold is removed. The cast is subjected to a temperature of about 60° C., which is gradually raised so as to reach 300° C. in about 2 weeks, maintained at 300° for one week, cooled gradually, and preferably allowed to season for a few weeks before using.—A. P.-C.

Acid Processes of Pulp Manufacture and Equipment

Continuous Evaporation of Sulphite Waste Liquor.—E. S. Sandberg. Can. patent 217,774, April 18, 1922.—The liquor is forced at a high speed through heating elements which are heated by means of compressed vapors generated from the liquors, so that a small difference of temperature can be maintained between the liquid and the heating vapors. The liquor is under a sufficient pressure to prevent any boiling in the heating elements. It is then introduced into an expansion chamber where the pressure is relieved and the vapor thus generated is compressed and used for heating. The gas is first separated in a concentration chamber prior to any substantial amount of boiling.—A. P.-C.

Process of Obtaining Tanning Materials from Sulphite Waste Liquor.—A. Romer. Can. patent 220,399, July 4, 1922.—The sulphur dioxide is removed by treating with a calcium salt, the calsium sulphite is filtered off, and the excess of calcium is removed by means of soda ash. Finally, an amount of hydrochloric or sulphuric acid is added sufficient to convert 50 to 100% of the alkali ligninsulphonate into the free acid, avoiding an excess. An equivalent amount of aluminum, iron or chromium chloride can be used instead of the strong acid.—A. P.-C.

Method of Utilizing Sulphite Waste Liquor.—P. A. Paulson. Can. patent 221,600, Aug. 1, 1922.—The liquor is heated under pressure to precipitate the lignin and resinous matter, the steam and sulphur dioxide given off being led to a digester. The precipitate is dried and burned under a boiler, the steam generated being used to heat the waste liquor, and the flue gases being used to dry the precipitated lignin.—A. P.-C.

Continuous Process of Decomposing Sulphite Waste Liquor.—K. Morch. Can. patent 221,733, Aug. 1, 1922.—The waste liquor is heated to a suitable degree in a preheater, and fed (by means of a pump or injector) continuously to a container kept under such high pressure that decomposition into calcium sulphate and lignin takes place immediately. The precipitate, liquor and gas are removed continuously and separated in any suitable manner.—A. P.-C.

Hardening of Sulphite Digester Lining.—C. H. Johnsson. Can. patent 220,028, June 27, 1922.—The fresh lining is subjected to the action of sulphur dioxide gas instead of to the action of sulphite cooking liquor. Top relief from another digester may be used.—A. P.-C.

Pipe Line System for Sulphite Digesters.—T. McA. Stewart, assignor to T. McAvity & Sons, Ltd. Can. patent 220,770, July 11, 1922.—The portions of the steam inlet and pulp outlet which are most subject to wear from the pulp and acid are reinforced so as to obtain, as nearly as possible, uniform wearing of the whole fittings.—A. P.-C.

Alkaline Processes of Pulp Manufacture and Equipment

Recovery of Soda from Waste Gases in Soda and Sulphate Pulp Manufacture.—O. Nordstrom and A. Morch. Can. patent 220,300, July 4, 1922.—The hot gases from the furnace are

passed through a filter consisting essentially of chips to be cooked. The chips are thereby dried and at the same time remove any soda entrained by the gases. The process is continuous fresh chips being continuously supplied.—A. P.-C.

Pulp Cooking Process.—L. Bradley and E. P. McKeefe. Can. patent 219,557, June 13, 1922.—The chips are cooked at 110 to 140 lbs. for 3 to 10 hours with a solution containing about 30 to 40% of sodium sulphite on the weight of air dry wood. In the case of resinous woods, the sodium sulphite cooking is followed by a slight caustic soda treatment, which is stronger the more resin the wood contains, and which may be carried out either in the digester, on the screen tailings, or by washing the pulp with dilute sodium hydroxide. Considerable increase in yield and improvement in quality are claimed. The spent liquor can be fortified and used over again several times, and finally worked up for by-products.—A. P.-C.

Pulp Treatment and Drying—Operation and Equipment

Decker.—A. J. Haug assignor to Sherbrooke Machinery Co. Can. patent 219,143, May 30, 1922.—Means are provided for driving the cylinder mold and couch roll in either direction, the couch roll being preferably driven at a slightly higher speed than the cylinder mold. The distance between the couch roll and cylinder mold is adjustable. When shutting down, the stock in the pulp tank can be discharged into the white water chamber.—A. P.-C.

Thickener for Pulp Tailings.—A. J. Haug assignor to Sherbrooke Machinery Co. Can. patent No. 219,145, May 30, 1922.—The tailings are delivered to the inner surface of a slightly tapered rotating screen drum. A roller presses against the drum near the lower, inner, ascending portion.—A. P.-C.

Pulp Screen.—A. J. Haug assignor to Sherbrooke Machinery Co. Can. patent 219,144, May 30, 1922.—A (preferably octagonal) screening drum rotates within a circular casing. The feeding device is so constructed as to act in conjunction with the rotation of the drum to positively drive the stock through the drum and subject it repeatedly to the screening action.—A. P.-C.

Riffler.—A. J. Haug assignor to Sherbrooke Machinery Co. Can. patent 220,545, July 4, 1922.—The apparatus comprises two parallel separating devices having a common inlet, which consist essentially of large open troughs to either of which the stock can be admitted as required. The stock passes under a baffle plate and over a weir plate. Beyond the weir is a series of riffle plates inclined in the direction of flow of the stock and preferably arranged in a descending scale of height. The bottom of the trough is slightly inclined towards the side to facilitate cleaning. Means are provided for easily and quickly flushing the apparatus. When one side requires cleaning the stock is diverted into the other side, so that the operation of the apparatus is not interfered with.—A. P.-C.

Rotary Pulp Screen.—C. H. Johnsson. Can. patent 220,027, June 27, 1922.—A screening drum having a polygonal or otherwise irregular cross section rotates in a vat which may also have either a polygonal or irregular cross-section. This causes the pulp to be alternately sucked on or pressed back from the drum, facilitating the screening operation. A suitable spray is provided for washing away the tailings.—A. P.-C.

Pulp Screen.—H. T. Baker and J. D. Haskell. Can. patent 217,879, April 25, 1922.—The stock is fed inside a cylindrical screen rotating in a casing of approximately elliptic cross section. On the outside of the rotor are blades, between each pair of which is a trough-shaped frame divided into sections by curved partitions. The stock, after having passed through the screen is carried around by the rotor as it passes the minor axes of the elliptical shell. There is but a small clearance between the rotor and the shell at this point, and the stock is compressed and has a tendency to flow inward, thus dislodging over-size fibers and dirt that tend to clog the screen plates.—A. P.-C.

Stripping Means for the Press Rolls of Wet Machines.—H. Hinckley. Can. patent 219,279, June 6, 1922.—According to Tidmarsh's U. S. A. patent 1,387,954 (and Can. patent 219,484), (see this journal, lxxv, No. 7, p. 56, Aug. 17, 1922) the pulp sheets are passed through final corrugated press rolls unsupported by the felt. As the pressure is increased beyond a certain point, the pulp is forced within the corrugations of the rolls, passes the edge of the doctor until finally the doctor is forced out of position and part or all of the sheet follows the roll. According to this invention this is prevented by providing the upper press with a number of narrow circumferential grooves. A series of narrow (about one-eight inch) belts run loosely in these grooves and around an idler roll in front of the press roll. As the sheet emerges from the nip of the rolls, it is forced forward by the guide belts.—A. P.-C.

Cutter for Wet Machine.—H. A. Constantine. Can. patent 218,766, May 23, 1922.—A guide or track, equipped with a carriage to which is attached a sharpened cutting point, is placed in front of the upper roll of the wet machine at a slight angle to the horizontal, so that the cut will be square across the sheet of pulp. When the pulp has reached a predetermined thickness, the cutter is rapidly driven across the face of the roll, and is slowly brought back to its initial position, so that by the time it has returned the pulp is again ready to be cut. Means are provided for gripping the edge of the sheet of pulp as soon as cut, moving it away from the machine and allowing it to fall at a predetermined point where the sheets are piled up. The device can be attached to existing machines.—A. P.-C.

Machine for Making Wire Mats for Pressing Lapped Pulp.—J. O. Hamel. Can. patent 221,798, Aug. 1, 1922.—A. P.-C.

Bleaching, Bleach Manufacturing and Equipment

Electrolyte for Bleach Making.—A. H. Hooker assignor to Hooker Electro-Chemical Co. Can. patent 221,428, July 25, 1922.—The electrolyte consists of a brine solution containing sufficient solid sodium chloride to maintain the brine within the cell in a condition of complete saturation at the operating temperature. Excess of salt must be avoided as it would clog the diaphragm.—A. P.-C.

Manufacture of Sodium Hypochlorite.—J. R. MacMillan, assignor to Niagara Alkali Co. Can. patent 218,958, May 23, 1922.—Chlorine is led into a cold mixture of milk of lime and sodium carbonate solution which is kept agitated. The chlorine is led in at a moderate rate so that not much heat is generated and the reaction is readily controlled, and there is little or no production of by-products. Introduction of chlorine is best stopped when the alkalinity has dropped to about 5%, so as to give stability to the solution. The chlorinated liquor is allowed to stand, and the clear liquid is decanted.—A. P.-C.

Electrolytic Cell.—J. Cranston and W. D. Le Bar. Can. patent 217,414, April 4, 1922.—The body of the cell is made of slate, concrete, or stone. A portion of each side of the body is cut away and against the cut-away portion a diaphragm is placed, the diaphragm being backed by a perforated metallic sheet serving as cathode. The latter at its lower end is bent upwards and outwards to form a trough for collecting the alkaline cell effluent. The sides of the upper portion of the body of the cell reach down far enough into the electrolyte to form a partition or sealing wall between the anode and cathode chambers, so that the gas formed in the anode chamber is kept separate. The anodes (preferably graphite) are mounted in sets through corresponding slots in the top of the body. They may be removed together and reversed relative to the cathodes, so that when a set of anodes has become eaten away to such an extent as to impair its efficiency it may be taken

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out and turned around to present a new face to the cathode. A sheet of metal hangs from the top of the body into the trough at the bottom of the cathode to provide a sealed chamber for drawing off the hydrogen.—A. P.-C.

Process of Bleaching Vegetable Fibers.—G. G. Taylor, assignor to American Writing Paper Co. Can. patent 217,811, April 18, 1922.—Boric acid, in less than the equimolecular proportions to the hypochlorite present (preferably 1 lb. per 100 lb. of stock), is added to the bleaching bath. The boric acid liberates hypochlorous acid and forms a borate, which is reconverted into boric acid by the action of the hydrochloric acid formed by decomposition of the hypochlorous acid, according to the equations $NaOCl + H_3BO_3 = NaBO_2 + HOCl + H_2O$; $2HOCl = 2HCl + O_2$; $HCl + NABO_2 + H_2O = NaCl + H_3BO_3$.—A. P.-C.

Paper Manufacturing and Equipment

Automatic Continuous Mixing System for Paper Stock.—C. H. Allen, E. J. Trimbey, and Great Northern Paper Co. Can. patent 219,561, June 13, 1922.—Re-issue of Can. patent 212,476, July 12, 1921. See this journal, lxxiv, No. 17, 49, April 27, 1922.—A. P.-C.

Adhesive, Waterproofing and Sizing Compositions.—A. E. Craver. Can. patent 217,598, April 11, 1922.—To a solution of a protein (e. g., casein) is added a substance capable of liberating formaldehyde on heating (e. g., sodium formaldehyde sulphoxylate, $H_2COHOSONa$, or formaldehyde sodium bisulphite, $H_2COHOSO_2Na$). Oxidizing agents may be added to aid the liberation of formaldehyde. The ingredients may be compounded dry and then mixed with a suitable solvent.—A. P.-C.

Paper Machine Screen.—J. A. Bystrom. Can. patent 220,206, June 27, 1922. A suitable vertical screen (about one-eight inch mesh) is provided between the pulp box and head box to prevent any lumps of pulp being discharged into the latter.—A. P.-C.

Watermarking Devices for Crepe Paper.—F. P. Klund, assignor to Hammermill Paper Co. Can. patent 217,865, April 18, 1922.—In watermarking crepe paper, if the watermarking roll were provided with annular rings to ensure continuous rotation, as is done on smooth surfaced papers, the surface of the sheet in contact with these rings would be flattened. According to the invention supporting devices of suitable ornamental design are placed in the spaces between the marking devices, so as to provide a bearing surface for the roll between the watermarks proper.—A. P.-C.

Dandy Roll.—H. Albro. Can. patent 220,878, July 18, 1922.—The cylinder mold is constructed so as to be diametrically expansible and contractible so that an indefinite number of outer watermarking gauzes may be employed on a single mold.—A. P.-C.

Effect of Seasonal Temperature on Paper Making.—W. A. Wylde. *Paper Ind.*, iii, 1506-1509 (Feb. 1922).—The main troubles encountered in paper making due to seasonal changes in temperature are: the water may be too hot in summer, causing the stock to be too free, or it may be too cold in winter, causing the stock to be too slow. Either of these conditions can seriously affect production. The dryness of the air in winter may cause curling at the edges or cockling of the sheet, rendering calendering almost impossible or seriously interfering with loft drying. These troubles can be overcome by installing a ventilating system which furnishes air at a definite humidity and temperature to the finishing room, such a system operating satisfactorily except on the hottest days in summer. Excessive dryness of the air in winter and humidity in summer change the moisture content of the paper, causing trouble in the finishing room and also at the shipping end due to overweight or shortage when the paper reaches the customer.—A. P.-C.

Questionnaire on Types of Burrs

The Ground Wood Committee of the Technical Association of the Pulp and Paper Industry has prepared and distributed the following questionnaire on "Different Types of Burrs" to the manufacturers of mechanical pulp in the United States and Canada. Those who have been overlooked are requested to communicate with E. R. Low, member of the committee, who is tabulating the information.

This questionnaire is being sent to ground wood manufacturers in order to secure data for preparing a paper on burrs for the next Technical Assocation meeting.

The committee sincerely hopes you will give us your co-operation by answering these questions and returning the questionnaire to Mr. E. R. Low, 306 Highland avenue, Buffalo, N .Y., as quickly as possible.

All information given will be treated confidentially and any data which is published will be taken as a whole and no individual replies or names printed.

Name .....

Company .....

Address .....

QUESTIONNAIRE

1. What kind of burr is used?
   (a) Solid.
   (b) Shell—Square Shoulder—Bevel Edge.
2. What size burr is used—how many cuts to the inch and which of the following type burrs are used?
   (a) Thread.
   (b) Spiral.
   (c) Diamond.
   (d) Straight Cut.
   (e) Combination.
3. If spiral type is used give full explanation of pitch and lead.
4. If combinations are used explain fully.
5. Do you make your own burrs?
   (a) What grade iron or steel is used?
6. From whom do you purchase your burrs?
7. What is life of burr?
8. How often are stones sharpened?
9. What is direction of burr travel in relation to rotation of stone?
10. Stone trueing lathe:
    (a) Make.
    (b) Hand operated.
    (c) Automatic.
11. Grindstone:
    (a) Size.
    (b) Kind.
    (c) Life—(production in tons).
12. Grinder: type, magazine or pocket.
    (a) Number of pockets.
    (b) Grinding pressure.
    (c) Production per 24 hours per grinder.
    (d) R. P. M.
    (e) H. P. used per ton.
13. What type fiber is secured?
14. Do you use same kind of burrs in summer as in winter?
15. Give any other information you may have regarding your experience with burrs with reference to their effect in production, life of stone and quality of fiber.

XUM

A DICTIONARY OF PAPER TERMS

(Continued from the issue of September 7, 1922)

Ungerer's Process. A modification of the sulphate process in which the liquors are exhausted by using them in a series of digestors. Repair cost militated against its success.

Union. A pipe fitting having a packing box with a movable threaded portion parallel to the axis of the pipe, setting up against the packing box, permitting the separation of pipes in a system, without cutting the pipes.

Unit Weight Test. A form of test that gives the result of 32 Ashcroft or Mullen tests on pulp, divided by twice the weight of the four sheets used.

Units of Heat. See thermal units.

Unsized Paper. See "blotting" and "waterleaf."

Upper Case. Capital letters.

Upsetting. (1) Spreading the teeth of a saw. (2) Thickening rods or shafts by hammering, usually done to enlarge the ends.

V

Vacuum. The absence of air or other gases. A perfect vacuum cannot be obtained owing to the porosity of even the densest material used as a container and the imperfection of exhausting devices. Degrees of vacuum conditions are indicated by liquids in U-shaped tubes called manometers and are generally given as inches of water or millimeters of mercury.

Vandyke Brown. A pigment of the ochre class containing organic matter, such as peat or bitumen.

Variable Speed Devices. Are of several forms. Belts running on cone shaped pulleys, and chains running in adjustable V-shaped openings between convex discs are two such cases.

Vascular Bundles. The strands of the stems and leaves of plants, the conducting media for sap.

Vat. A trough, tub or tank in which processes are carried on in a liquid medium. Hand made papers are called 'vat' papers because the mold is dipped into the vat containing the prepared stock.

Vat Dyes. Insoluble dyestuffs which require to be reduced and dissolved in alkaline liquors. Indigo is an example, also indanthrene.

Vegetable Gum. See Dextin.

Vegetable Parchment. See Parchment.

Vellum. A thick writing paper somewhat resembling real vellum or prepared calfskin in appearance, made from high-class rags, which have been subjected to long beating or chemical treatment.

Veneer. Thin pulp or fiber boards suitably colored and highly glazed. Used as the name implies.

Venetian Red. A native ochre of varying shades of red. Artificial varieties are also prepared from iron sulphate. It is used for coloring paper, principally wrappers and boards.

Vesuvius Burner. A vertical stationary sulphur burner with a melting pan or kettle on the top from which sulphur is fed to trays disposed in a vertical series, while air is supplied at the front of each.

Vinegar. See Acetic acid.

Viscose. A form of cellulose obtained by treatment of cellulose with alkali and solution in carbon bisulphide.

Viscosity. The property of a liquid whereby it resists deformation. The speed of a liquid passing from an orifice depends among other conditions on its viscosity.

Vitriol. See Sulphuric Acid, called oil of vitriol.

Vitriols. Blue—Sulphate of Copper.
Green—Sulphate of Iron.
White—Sulphate of Zinc.

Volatile. Having the property of evaporation. Water, gasoline, alcohol, ammonium chloride, etc., are volatile.

Volt. The unit of electromotive force. It is the force which produces a current of one ampere against a resistance of one ohm.

Volume Composition. The components of a sheet of paper given in terms of the volume they occupy.

Volumetric Analysis. The use of measured reagents in solutions of known strength to determine qualities of other reagents in measured solutions of unknown strength. The testing of cooking liquors is an example.

Vulcanizing. Paper or boards treated superficially with a strong solution of zinc chloride and thereby rendered very hard and waterproof. Sheets pressed together when wet to form a compact mass. Rubber is vulcanized by treating it with sulphur under high temperature and pressure.

W

Washer. See Drum Washer.

Washer Trough. A small trough through which the deckle strap passes and is subjected to a cleansing jet of water.

Washing Soda. See Sodium Carbonate.

Waste Liquor. The spent cooking liquor discharged from a sulphite mill.

Water. A compound of hydrogen and oxygen containing two atoms of hydrogen and one atom of oxygen in its molecule and has therefore, the formula H_2O with the atomic weight of 18.016.

Water-Finished. Paper highly glazed by the action of heated calenders on the surface of the paper, which has been moistened just before entering the calender stack.

Water Glass. See Sodium Silicate.

Waterleaf. The term applied to sheets of hand-made paper or machine-made paper before being sized, or which are not sized.

Water-Marked. Any paper containing a water-mark, or distinct design in the fabric, produced by the raised pattern on a mold or a dandy roll previous to pressing. Some of the earlier water-marks are called to mind in the terms used for certain sizes of paper, as foolscap, pott, hand, royal crown, etc. A simulated water mark or "press mark" is produced by pressing a design by means of type or a felt carrying a pattern just before the paper is dried.

Waterproof. Various sorts: Roofing and tar papers, parchments and oiled papers. Special qualities prepared by soaking paper in a solution of shellac, with or without borax.

Watt. The unit of electric power. It is the energy produced by a current of one ampere under a potential difference of one volt. Watts, therefore, equal volts X amperes. One horse power—746 watts.

Waxed Tissues. Tissues impregnated with paraffin wax. Used for stencils, cyclostyle work, confectionery, bread and fruit wrappers.

Weak Acid. The acid prepared in the second tower of the two-tower system, it only contains the excess gases from the first tower. It is pumped as a supply to the first tower.

Web. The sheet of paper coming from the machine in its full width.

Wedding Bristol. A term employed to denote a class of

TECHNICAL SECTION, PAGE 148

XUM

high grade papers and cardboards, of heavy weight and medium smooth finish, used for wedding and social announcements, cards, etc.

Wedge Furnace. A vertical furnace for burning pyrites as a source of sulphur dioxide in sulphite mills or in the manufacture of sulphuric acid. The mineral is fed in at the top and is raked in succession over a series of superimposed trays, by moving arms.

Weir. A barrier placed in a stream to raise its level and used to measure the flow.

Wet and Dry Bulb Hygrometer. See Hygrometer.

Wet End. The part of a paper machine upon which the stock is formed into a sheet. It includes in a fourdrinier machine the flow box, apron, pond, slices, table rolls, wire, deckle straps, breast roll, couch roll and presses.

In a cylinder machine it includes the vats, cylinders couches, primary presses, etc. In both cases it is all that portion up to the first drier.

Wet Lap. The folded sheet obtained by cutting the sheet of pulp off a wet machine press roll and doubling it to convenient shape.

Wet Machine. A machine used to form sheets of pulp which are not to be dried or of paper to be air dried. Water is removed by pressure between two rolls after the sheet is formed on a cylinder mold and taken off by a couch roll to the felt of the machine. The pulp or paper is allowed to accumulate on the upper press roll until of sufficient thickness, when it is cut off.

Wet Press. Equivalent to wet machine which see—

Whatman's. A celebrated high-class drawing paper named after the original maker, one of the earlier pioneers of papermaking, J. Whatman, who established a mill at Maidstone, England, 1760. Also applied to filter papers of certain qualities made in England.

White Iron Pyrites. See Marcasite.

White Light. Light in which all the colors of the spectrum are present in their proper positions.

White Liquor. The clear solution prepared for cooking soda or sulphate pulp.

White Paper. Printers call all unprinted paper white, whether colored or not.

White Vitriol. See Vitriols.

White Water. Returned water from pulp thickeners, used to supply grinders, sliver screens or in other ways whereby its chance content of fibre is largely saved. (See also back water.) So called from the color which is due to finely divided material held in suspension.

Wild. A mottled appearance in paper, due to many causes sometimes to over freeness or excessive suction at first suction box.

Willesden. Paper impregnated or surfaced with an ammoniacal solution of cupric oxide, which, acting upon the fiber renders it partly gelatinous and imparts the quality of imperviousness to water.

Willowing Machine or Willow. A machine for removing dust or dirt from paper stocks, such as rags, straw, esparto. See Duster, Thrasher.

Winder. The means of rolling the paper to finished sizes at the end of the paper machine. To be distinguished from reels which take the continuous sheet from the dryers. See Reels.

Wire. See Paper Machine.

Wire Mark. The impression of the fourdrinier wire on the underside of the paper.

Wood Alcohol or Wood Spirit. A product of the destructive distillation of wood, Methyl alcohol, c. f. now legally called Methanol in the United States and Methyl Hydrate in Canada.

Wood Naphtha. Wood alcohol.

Wood Pulp. A general term for paper made from wood pulp. Qualities numerous.

Woods Metal. A fusible alloy melting at 158° F. consisting of tin, 4 parts; lead 8 parts; bismuth 15 parts; and cadmium, 4 parts. This or similar metals are used in automatic sprinklers.

Wood Vinegar. Crude acetic acid from the distillation of wood.

Wool Fat. Lanoline, sometimes used in lubricants. A by-product in the washing of wool. It is readily emulsified.

Worm Gears. A means of imparting motion to toothed wheels by means of a screw cut on the bay of a shaft or a small sleeve shrunk onto the shaft. Usually imparts motion at right angles.

Worm Knotter. A device for removing knots and hard chips from pulp after cooking. It consists of a spiral conveyor either stationary in a revolving cylinder or revolving in a stationary cylinder into which the pulp is pumped passing out through the screen wire sides of the cylinder and leaving knots or chips to be thrown out by the motion of the conveyor.

Worm Wheel. A toothed wheel specially cut to engage a worm gear.

Wove. A term applied to paper made with a woven dandy, in which the wires cross and recross at even distances apart in a manner quite distinct from laid wires.

Wrapping Papers. Under the heads of bag, biscuit caps, browns, caps, carbolic, casing, cork, corrugated, cutlery, drapers, fruit, grocery, hosiery, kraft, parchment, rocket, royal hand, sealings, shops, skips, small hands, sulphite browns, tea cartridge, tobacco papers. See also under sizes of paper.

X

X. The term used in mathematics to indicate an unknown quantity.

Xanthates. Compounds of the alkalies—e. g. Sodium with xanthogenic acid. These reactions form the basis of viscose sizing which is a method of precipitating cellulose from the sodium compound in the beater.

Xylem. The term applied in botany to the wood of plants.

Xylonite. A compound prepared from cellulose nitrate, capable of being molded or turned for ornamental or art products.

Xylose. One of the pentoses or five-carbon sugars. It does not undergo alcoholic fermentation. It is a product of the hydrolysis of wood gums.

Y

Yankee Machine. A fourdrinier machine for light weight papers having only one—but very large—dryer. It produces a sheet that is smooth on one side and rough on the other. See Machine Glazed MG.

Yaryan Evaporator. A multiple effect evaporator from its designer.

Yellow Chrome. Chromate of lead.

Yellow Ochre. A pigment consisting of ferric oxide with clay matter.

Yellow Prussiate of Potash. Ferrocyanide of potash.

Yellow Wove. A printer's term for a cheap blue paper.

Yield. The amount of paper or pulp obtianed from its raw material, as in pounds per cord, tons per digester, pounds of paper per ton of stock, etc.

Z

Zacaton. A Mexican grass of fair promise as a source of paper making fiber.

Zaremba. A form of multiple effect evaporator from its designer.

(To be concluded)

XUM

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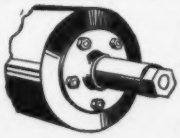

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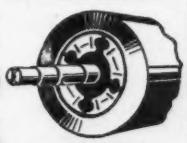

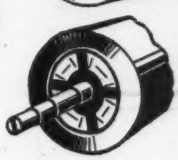

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8

New York Trade Jottings

The Coppage Printing and Loose Leaf Company, Inc., of 541 Pearl street, New York, has just placed on the market a new paper designed for carbon and file copy use. "Seaco Parchment" is the name of the new brand.

* * *

The weekly meeting of the Metropolitan Paper Box Manufacturers' Association were resumed for the Fall and Winter season when a luncheon was held at the Hotel McAlpin Wednesday of this week. Carl Snyder, manager of the statistical department of the Federal Reserve Bank, was the principal speaker.

* * *

At the annual meeting of the National Publishers' Association, held Tuesday at the Engineers' Club, 32 West 40th street, the following officers were elected: President, H. H. Sweetland; first vice-president, R. J. Cuddahy; second vice-president, P. S. Collins; secretary, Frank C. Hoyt; treasurer, Roger W. Allen; executive secretary, Frederic W. Hume.

* * *

F. W. Anderson & Co., of 34 Beekman street, New York, has recently devised an unique cabinet for use in displaying paper samples. It is made of solid, quarter-sawed oak and attractively displays the various types of Anderson bonds, writing papers, linens, etc. The shape of the cabinet, occupying less than a cubic foot of space, is such that it may be readily used on a desk.

* * *

The H. Norwood Ewing Company, paper selling agent, of 233 Broadway, filed a petition in bankruptcy this week, listing liabilities of $105,205 and assets of $41,198. Among the principal creditors are: Phœnix Toilet and Paper Machine Company, $32,877; Crescent Paper and Machine Company, $24,055, partly secured, and Clayville Paper Mills, $7,749. The main items of the firm's assets are: Accounts, $29,156; stock, $4,675, and advertising matter. The latter includes a quantity of "League of Nations" booklets, valued at $1,713. Emil Frankel was appointed receiver, under $500 bond, by Judge Mayer.

* * *

The Albany Mill Supply Company, Inc., announces that since September 15 it has been located in its new quarters at 35 South William street, New York, and continues to handle all grades of rags, cotton and wool waste and paper stock. This company was started in Albany, N. Y., about 18 years ago by John Doolan, formerly of Springfield, Mass., and was later moved to larger quarters in Troy, N. Y. Here it has conducted a successful business for the last 10 years. It is now leaving Troy for the larger field of New York City. The company was recently incorporated for $100,000. The incorporators are: John Doolan, Thomas H. Doolan, Mildred Doolan Wiley, Mary Doolan Schroeder and A. M. Howard. The officers are: John Doolan, president; Thomas H. Doolan, vice-president and treasurer, and A. M. Howard, secretary and assistant treasurer.

Fire Damages Plant of United Paperboard Co.

WHIPPANY, N. J., September 15, 1922.—Fire, believed to have been caused by spontaneous combustion, last night destroyed a large storehouse of the United Paperboard Company's mill at Whippany and three freight cars, caused damage to the mill estimated at $50,000 and necessitated the calling out of fire companies from the township and Morristown departments before it was brought under control.

About 30,000 pounds of paper stock were contained in the warehouse, according to statements made by executives of the company.

The fire last night was the second one in recent years in the Whippany plant of the United Paperboard Company.

W. D. Gregor to Manage Newton Falls Mill

W. D. Gregor has been appointed general manager of the Newton Falls Paper Company, Newton Falls, N. Y. The plant is owned jointly by the McGraw-Hill Company, Inc., and the United Publishers' Corporation, both of New York City. While it is used principally for the manufacture of book paper for the sole use of the owners, some bond paper for the general market is also made in order to use the sulphite which is surplus to the book-paper manufacture.

Mr. Gregor has been in the paper manufacturing business since

W. D. GREGOR

1904, his first ten years having been with the Oxford Paper Company, where he was general superintendent during the last four years. From there he went to the new Price Brothers' plant at Kenogami, P. Q., as manager and at the same time handled the Jonquiere plant. His specializing in the handling of plant changes has brought him in contact with the Peerless Mill, Dayton, Ohio; the Remington group of mills, the Arrowhead Company and the Bayliss Manufacturing Corporation, Austin, Pa. It is from this latter plant that he is making the move to Newton Falls.

Trimbey Machine Works Exhibit

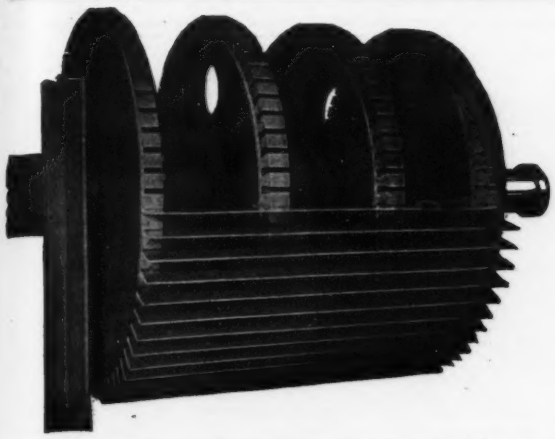
One of the exhibits of last week's Eighth Annual Exposition of the Chemical Industries, held at Grand Central Palace, New York, of peculiar interest to paper manufacturers, was that of the Trimbey Machine Works, Glens Falls, N. Y.

The Trimbey Machine Works, paper mill engineers and manufacturers presented an interesting display of Constistency Regulators, stock meters, proportioning and metering systems and sulphur burners, all of which were specifically paper mill equipment. Aside from the sulphur burner which was shown, the remainder of the Trimbey devices are peculiar in that there are none other like them on the market.

A. A. Poulin Resigns From Mumford Paper Mills

[FROM OUR REGULAR CORRESPONDENT]

MUMFORD, N. Y., September 18, 1922.—A. A. Poulin has resigned his position as general manager of the Mumford Paper Mills, Inc., Mr. Poulin's plans for the future are undecided but for the present he will spend several weeks at his former home in Farmington, Me.



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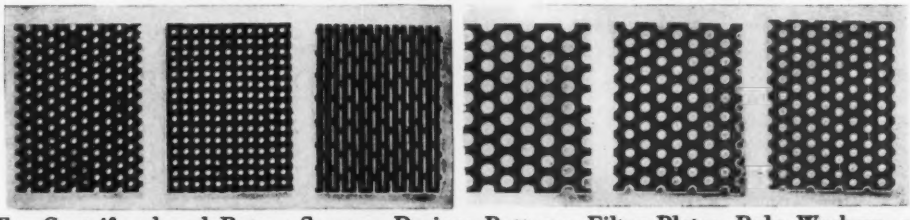

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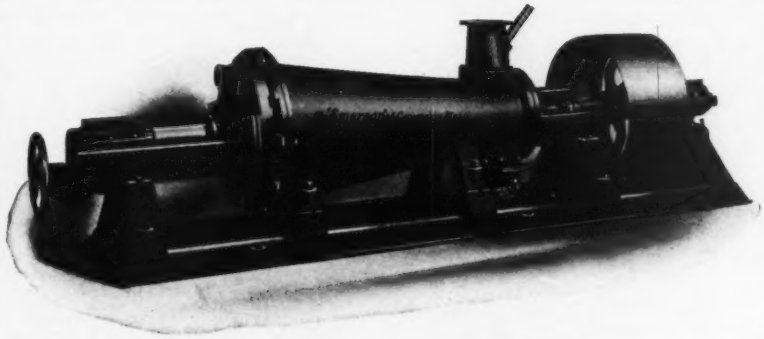

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WRITE FOR DETAILS

Obituary

Ernest H. Greppin

Los Angeles, Cal., September 18, 1922.—Ernest H. Greppin, manager of Blake, Moffitt & Towne, paper merchants, Los Angeles, died September 5 at his residence, 1657 St. Andrews place, in this city. His death was a great shock to his many friends in social and business circles.

Mr. Greppin was born in St. Louis, Mo., December 8, 1867, and moved to San Francisco in 1887. In 1890 he was married to Miss Kate Skillman and two children were born of the union—a daughter, now Mrs. Perry A. Howard, Jr., and a son, Lloyd E. Greppin. In 1895 he came to Los Angeles as manager of Blake, Moffit & Towne, which position he held for nearly twenty-eight years.

Mr. Greppin was a member of the Jonathan Club of Los Angeles and the Wilshire Country Club. He was a Knight Templar and a thirty-second degree Scottish Rite Mason and was a life member of the Shrine.

His last illness was of about seven weeks' duration and he seemed headed toward recovery until two days before his death.

The funeral services were held on Thursday morning, September 7, at eleven o'clock, in Commandery Room of the Masonic Temple.

STEAM TURBINES FOR PAPER MILLS

(*Continued from page* 38)

The advantages of the auxiliary operated valve over the old type are many. Probably the most important advantage is that this valve will shut off tight on the slightest change in the reduced pressure, making it the only valve suitable for delicate or dead end service. Fluctuation of the initial pressure has no effect on the operation of the valve. The reduced pressure is always held constant regardless of the initial pressure. Any reduction in pressure can therefore be accomplished through a single stage, which is an important advantage. It is also worth while knowing that this valve always remains sensitive under high pressure and high temperature service.

Important Factors to Be Considered

The important factor to be considered when selecting reducing valves is the nature of the service, having in mind the following facts:

Diaphragm or piston controlled valves are not suited for dead end service, nor where a great reduction in pressure is desired through a single stage.

Diaphragm or piston controlled valves with weighted levers are not suited for high pressure service.

Valve seats of the sliding piston type are suitable only where there is no objection to a constant flow of steam of considerable volume.

Auxiliary operated valves are suitable only where the initial pressure exceeds the reduced pressure by at least 10 pounds.

Diaphragm controlled valves are not suitable for high pressure or superheated steam.

Cast iron or bronze body valves are not suitable for temperatures exceeding 450 deg. Fahr.

As the life of a reducing valve is considerably less than the life of pipe fittings and of the ordinary globe valve, it is an advantage to have union or flange connections on all reducing valves so that repairs can be easily and quickly made without disturbing the balance of the pipe line. If possible, select a valve that can be repaired without the necessity of removal from the pipe line.

After the type of reducing valve has been selected, the factors to be considered when selecting the make are the simplicity and accessibility of the design, the materials entering into its construction, the reputation of the manufacturer behind it, and the total pounds of steam that will be handled by the valve during its lifetime per dollar expended.

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125 Forest Street, Lee, Mass.

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 16, 1922

SUMMARY

News print.....8,340 rolls
Printing paper.....203 cs.
Surface coated paper.....69 cs.
Wall paper.....24 cs., 2,277 rolls, 243 bls.
Hangings.....9 cs., 42 bls.
Cigarette paper.....849 cs.
Crepe paper.....76 cs.
Colored paper.....11 cs.
Photo paper.....1 cs.
Wrapping paper.....498 bls., 1,280 rolls, 24 cs.
Drawing paper.....26 cs.
Filter paper.....79 cs.
Writing paper.....16 cs., 4 pgs.
Miscellaneous paper..366 cs., 2,689 bls., 14,721 bls.

CIGARETTE PAPER

Rose & Frank, Sarcoxie, Havre, 10 cs.
R. J. Reynolds Tobacco Co., by same, St. Nazaire, 520 cs.
De Manduit Paper Corp., by same, 267 cs.
British-American Tobacco Co., Celtic, Liverpool, 52 cs.

PAPER HANGINGS

A. C. Dodman, Jr., Celtic, Liverpool, 13 bls.
W. H. S. Lloyd & Co., Mesaba, London, 6 bls., 1 cs.
W. H. S. Lloyd & Co., Menominee, London, 23 bls., 4 cs.
A. C. Dodman, Jr., Aquitania, Liverpool, 4 cs.

WALL PAPER

A. C. Dodman, Jr., Zeeland, Antwerp, 6 cs.
F. G. Prager Co., by same, 1,084 rolls.
R. F. Downing & Co., Del Maru, Yokohama, 18 cs.
R. F. Downing & Co., President Monroe, London, 3 bls.
J. W. Hampton, Jr., & Co., St. Paul, Hamburg, 240 bls.
F. G. Prager Co., Kroonland, Antwerp, 1,193 rolls.

SURFACE COATED PAPER

P. C. Zuhlke, by same, 69 cs.

PRINTING PAPER

H. Lips, Kroonland, Antwerp, 85 cs.
B. F. Drakenfeld & Co., Celtic, Liverpool, 16 cs.
P. Puttmann, Zeeland, Antwerp, 102 cs.

NEWS PRINT

C. L. Robinson, Drottningholm, Gothenburg, 182 rolls.
Parsons & Whittemore, Belvedere, Kotka, 2,219 rolls.
Galveston Tribune, by same, Helsingfors, 64 rolls.
Parsons & Whittemore, by same, 363 rolls.
Kalamazoo Stationery Co., by same, 945 rolls.
New York American, Songelv, Hallstanik, 4,567 rolls.

CREPE PAPER

J. W. Hampton, Jr., & Co., Bayern, Hamburg, 38 cs.
Globe Shipping Co., Noordam, Rotterdam, 38 cs.

COLORED PAPER

P. C. Zuhlke, Bayern, Hamburg, 11 cs.

PHOTO PAPER

Eastman Kodak Co., Menominee, London, 1 cs.

WRAPPING PAPER

F. A. Munsey Co., Drottningholm, Gothenburg, 96 bls.
F. A. Munsey Co., by same, 62 rolls.
Arkell Safety Bag Co., by same, 115 rolls.
M. O'Meara Co., by same, 115 rolls, 110 bls.
Hudson Trading Co., by same, 8 bls.
Paper House of Pennsylvania, by same, 120 rolls.
E. C. Melby, Stavangerfjord, Kristiania, 171 rolls.
E. C. Melby, by same, 266 bls., 30 rolls.
Reitman, Pilcer & Co., Bayern, Hamburg, 15 rolls.
Japan Paper Co., by same, 24 cs.
A. E. McAdam, Drottningholm, Gothenburg, 18 bls., 652 rolls.

DRAWING PAPER

G. M. Fawser, Mesaba, London, 1 cs.
Favor, Ruhl & Co., by same, 4 cs.
H. Reene Angel & Co., by same, 11 cs.
E. Dietzgen & Co., St. Paul, Hamburg, 4 cs.
H. Reene Angel & Co., Vasconia, London, 6 cs.

FILTER PAPER

H. Reene Angel & Co., Vasconia, London, 20 cs.
H. Reene Angel & Co., Aquitania, Liverpool, 1 cs.
H. Reene Angel & Co., Zeeland, Antwerp, 6 cs.
H. Reene Angel & Co., Mesaba, London, 4 cs.
E. H. Sergeant & Co., Drottningholm, Gothenburg, 7 cs.
E. Fougera & Co., Majestic, Bordeaux, 41 cs.

WRITING PAPER

H. Reene Angel & Co., Vasconia, London, 6 cs.
H. Reene Angel & Co., Aquitania, Liverpool, 4 cs.

PARCHMENT PAPER

F. C. Strype, Zeeland, Antwerp, 16 cs.
S. T. Eutrisk, President Harding, Hamburg, 4 pgs.

PAPER

L. Dejonge & Co., Providence, Marseilles, 20 cs.
H. Lips, by same, 88 cs.
Bank of America, Winnebago, Gothenburg, 93 bls., 80 rolls.
Irving National Bank, by same, 490 bls.
Republic Bag & Paper Co., by same, 1,174 rolls.
Irving National Bank, Bayern, Hamburg, 10 cs.
Chemical National Bank, Bayern, Hamburg, 386 bls., 200 rolls.
Moore Bros. & Co., Edgehill, Rotterdam, 8 cs.
Tamm & Co., by same, 16 cs.
Birn & Wachenheim, Noordam, Rotterdam, 66 cs.
Japan Paper Co., by same, 129 cs.
Kern Commercial Co., by same, 25 cs.
Wilkinson Bros. & Co., Inc., Drottningholm, Gothenburg, 244 bls.
Wilkinson Bros. & Co., Inc., by same, 479 rolls.
A. E. McAdam, by same, 99 bls., 2,176 rolls.
T. Barrett & Sons, by same, 51 bls.
J. P. Heffernan Paper Co., by same, 603 bls.
D. S. Walton & Co., by same, 684 rolls.
Chase National Bank, by same, 13 bls., 284 rolls.
Republic Bag & Paper Co., by same, 3,336 rolls.
C. K. McAlpine, by same, 584 rolls, 107 bls.
C. G. Vinaus Co., by same, 1,085 rolls, 10 bls.
Equitable Trust Co., by same, 297 rolls, 225 bls.
Baxter Paper Co., by same, 45 bls.
Mugler & Umlauf, by same, 6 rolls.
T. Nevin, Menominee, London, 4 cs.
Whiting & Patterson, Paris, Havre, 5 cs.
M. O'Meara Co., Belvedere, Helsingfors, 347 bls.
Fernstrom Paper Co., Inc., Stavangerfjord, Kristiania, 53 bls.
People's Trust Co., by same, 53 bls.
First Federal Foreign Banking Corp., Orduna, Hamburg, 872 rolls.
L. Schulman & Co., Yorck, Bremen, 503 rolls.
New York Tribune, by same, 288 rolls.
Wilkinson Bros. Co., Inc., Oscar II, Trondhjan, 1,426 rolls.
Equitable Trust Co., by same, Copenhagen, 1,155 rolls, 212 bls.
F. L. Kraemer, President Monroe, London, 5 cs.

RAGS, BAGGING, ETC.

Castle, Gottheil & Overton, Norfolk Range, Dundee, 85 bls. flax waste.
Castle, Gottheil & Overton, by same, 26 bls. thread waste.
Castle, Goottheil & Overton, Adriatic, Liverpool, 82 bags hide cuttings.
Castle, Gottheil & Overton, La Lorraine, Havre, 247 bls. rags.
Castle, Gottheil & Overton, Pioneer, Antwerp, 287 bls. rags.
Castle, Gottheil & Overton, by same, 68 bls. new cuttings.
A. Hurst Co., Inc., by same, 114 bls. rags.
Katzenstein & Keene, Inc., by same, Havre, 114 bls. rags.
Equitable Trust Co., by same, 288 bls. rags.
Katzenstein & Keene, Inc., Edgehill, Rotterdam, 374 bls. rags.
Katzenstein & Keene, Inc., by same, 52 bls. new cuttings.
Katzenstein & Keene, Inc., by same, 152 bls. bagging.
P. Berlowitz, by same, 284 bls. rags.
American Wood Pulp Corp., by same, 310 bls. rags.
Parsons & Whittemore, by same, 225 bls. rags.
Salomon Bros. & Co., Galileo, Hull, 177 bls. rags.
Irving National Bank, Kroonland, Antwerp, 150 bls. flax waste.
Dexcar Trading Co., Menominee, London, 385 bls. rags.
Equitable Trust Co., by same, 69 bls. waste paper.
Allison Trading Co., by same, 7 bls. rags.
Castle, Gottheil & Overton, Paris, Havre, 37 bls. rags.
E. J. Keeler Co., Inc., President Harding, Hamburg, 148 bls. rags.
International Acceptance Bank, New Amsterdam, Rotterdam, 129 bls. rags.
Irving National Bank, Zeeland, Antwerp, 118 bls. flax waste.
Equitable Trust Co., by same, 30 bls. flax waste.
Mechanics' & Metals National Bank, Graciana, Middlesbrough, 264 bls. paper stock.
J. & M. Jaffe, Columbia, Glasgow, 5 bls. paper stock.
Katzenstein & Keene, Inc., by same, 173 bls. rags.
Katzenstein & Keene, Inc., Yorck, Bremen, 176 bls. rags.
F. P. Gaskell, by same, 233 bls. rags.
American Exchange National Bank, by same, 377 bls. rags.
Irving National Bank, Oscar II, Copenhagen, 54 bls. rags.
Irving National Bank, by same, Aahrus, 57 bls. rags.
Irving National Bank, by same, Aalborg, 22 bls. rags.
Albion Trading Co., President Monroe, London, 24 bls. rags.
Castle, Gottheil & Overton, Vasconia, London, 26 bls. rags.
G. M. Cranes & Co., by same, 29 bls. rags.
Atlantic Waste Material Co., by same, 17 bls. rags.
Goldman, Sachs & Co., Bayern, Hamburg, 124 bls. rags.
E. J. Keller Co., Inc., by same, 83 bls. rags.
W. Barnet & Sons, Carenco, Marseilles, 53 bls. rags.
Irving National Bank, by same, 20 bls. rags.
Equitable Trust Co., Mesaba, London, 83 bls. waste paper.
R. Angles, Roussillon, Havre, 46 bls. rags.
Strathmore Paper Co., by same, 18 bls. rags.

OLD ROPE

M. Caragol, Carenco, Barcelona, 8 coils.
G. W. Millar & Co., President Harding, Hamburg, 84 coils.
First National Bank of Boston, New Amsterdam, Rotterdam, 138 coils.
Brown Bros. & Co., Galileo, Hull, 186 coils.
Katzenstein & Keene, Inc., Luxpalile, Genoa, 216 bls.

CASEIN

T. M. Duche & Sons, Sask, Buenos Aires, 1,251 bags.
A. Klipstein & Co., Mesaba, London, 300 bags.
Bank of America, Canadian Leader, Wellington, 562 bags.
Guaranty Trust Co., by same, 320 bags.

CHINA CLAY

Baring Bros. & Co., Choyo Maru, Fowey, 2,953 tons.
J. Richardson & Co., by same, 161 tons.
J. W. Higman Co., Inc., by same, 1,107 tons.
Paper Makers Importing Co., by same, 1,841 tons.
L. A. Salomon & Bros., by same, 25 tons.

WOOD PULP

Bulkley, Dunton & Co., Africanic, Stugesund, 2,750 bls.
J. Andersen, Winnebago, Gothenburg, 250 bls.
R. F. Hammond, by same, 1,000 bls., 200 tons.
M. Gottesman & Co., Inc., by same, 1,000 bls.
Guaranty Trust Co., by same, 1,200 bls.
A. J. Pagel & Co., Inc., by same, 6,100 bls.
The Borregaard Co., Oscar II, Kristiania, 200 bls.
E. Naumburg, Stavangerfjord, Kristiania, 660 bls., 100 tons.
R. F. Hammond, by same, 900 bls., 150 tons.
J. Anderson, by same, 1,550 bls.
A. J. Pagel & Co., Inc., Alarich, Skutskar, 5,400 bls.
American Wood Pulp Corp., by same, 1,500 bls.
Scandinavian-American Trading Co., by same, 750 bls.
M. Gottesman & Co., Inc., by same, 2,500 bls.
Brown Bros. & Co., by same, 2,700 bls.
Castle, Gottheil & Overton, Noordam, Rotterdam, 257 bls.
M. Gottesman & Co., Inc., by same, 580 bls.
M. Gottesman & Co., Drottningholm, Gothenburg, 1,000 bls.
Johanesson, Wales & Sparre, by same, 750 bls.
R. F. Hammond, by same, 1,000 bls., 200 tons.
Irving National Bank, Belvedere, Kotka, 3,405 bls., 627 tons.

(*Continued on page 64*)

Felt Test—Lowest Cost per Ton

If you judge felt values, not by what you put into the equipment, but what you get out of it—then you will specify ORR 3 stripe Endless Felts, for ORR felts will produce the lowest cost per ton. They "stand up" under severe usage. Orr durability is acknowledged everywhere. Their strength and long life are as dependable as their reliability and quality.

In the 32 grades of Felts and Jackets we can match your most exacting demands. Tell us the kind of paper you desire to make, and we will send you samples of felts that will economically serve you and help you to produce paper at lowest cost per ton.

THE ORR FELT & BLANKET COMPANY, Piqua, Ohio

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Lombard & Co., Incorporated
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Branch at Montreal, Canada

Perforated Metal Screens

For Pulp and Paper Mills

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STEEL, COPPER, BRASS, BRONZE and other Alloys

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⅛ x ½ Inch Slots

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SIDE OR ODD LOT ROLLS

Not interested in any item of less than one ton. The larger the quantity the better.

Any color, strong sulphite or kraft paper will do. Basis weight immaterial.

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WILLIAM A. HARDY & SONS COMPANY, Fitchburg, Mass., U.S.A.

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, September 20, 1922.

In spite of the fact that newspaper headlines no longer wholly concern themselves entirely with the rail and coal tie-ups, manufacturers are suffering acutely due to the freight embargoes on three large Eastern railroads. The New York paper market has not undergone any decided change during the past week, with the exception of a resumption of quotations on the part of board manufacturers at considerably higher levels than were prevailing when prices were withdrawn several weeks ago.

The new board prices, however high, may be taken as an indication that manufacturers are resuming confidence in the stability of market conditions and no longer hesitate to render quotations on a weekly basis. It is generally expected that book, fine and tissue paper manufacturers will follow suit this week in resuming quoted prices to the trade owing to the tremendously improved outlook in the industrial situation. Waste paper eased off a trifle during the last four or five days, despite the scarcity of available supplies, but this situation was looked upon as a transitory one.

The fact that metropolitan newspapers are devoting page after page in the many editions which are now being published to the sole end of increasing their circulation may account in part for the protracted demand for news print paper. Advertising, it is stated on authority, has not yet reached the high peak of 1920 in volume, but this space is offset by the efforts of publishers to increase the number of readers of their publications. News print mills are running full blast, many of the manufacturers having voluntarily increased the wages of employees, and withal, there are practically no reserve stocks of news print on hand, practically every roll or sheet going into consumption as fast as it is produced. This situation of itself would make for considerably higher prices during the last quarter of this year, leaving out of consideration the transportation and fuel difficulties with which producers are contending, to say nothing of their expenditures for enlarging the capacity of their plants to meet this phenomenal demand. Announcement of the new price schedule is expected within the next week or ten days.

The book paper business in and around New York has seldom seen better days. Orders are coming in to dealers thick and fast, and mill agents are only experiencing difficulty in making definite promises for shipment in the near future. Owing to the fact that manufacturers of book paper are still obliged to quote on a day-to-day basis, it is almost impossible to contract for business a scant thirty rays away. One thing is known definitely. While prices are stiffening and the demand continues as persistently as it has for the past month—business cannot fail to be good.

Fine paper prices have advanced in many cases under cover of the general withdrawal of quotations. Although they may be still changed from day to day, it is generally anticipated that ultimate cost to the consumer will aggregate at least from 10 to 15 per cent more on ream or broken case orders. Many grades of writings and linens, as well as bonds, have been affected by these price readjustments. In defense of the mills, it may be stated that many have actually been operating on a losing basis, and are merely taking advantage of this opportunity to reinstate prices for their products that will admit of a fair profit. The export trade in fine papers is gaining momentum.

There now appear to be about three tissue buyers for each seller of the commodity in the New York market. At least that is the impression gained from talking with several prominent tissue dealers. The Fall clothing trade is demanding enormous quantities of tissue and when dealers attempt to meet their customers' requirements they run up against the stone wall of an empty stock room. Prices are still withdrawn in this market and prices will undoubtedly undergo a considerable stiffening before the weekly quotations are resumed.

With an advance in the price of screenings to 3.00 to 3.50 cents a pound and a corresponding boost in the cost of common bogus paper, the kraft market of the past week continued to register a healthy activity. Bogus mills are just beginning to breathe a little more freely since the coal situation appears to have faded into history and a few railroad cars are once more available for bringing in raw materials and carrying away the manufactures.

The following board prices may still be regarded as nominal: Chip, $60; news, $65; single manila lined chip, $70, and binder's board, $75. While these prices are subject to almost daily revision, it is felt that any change would be still further in an upward direction. Dealers have too many orders and not enough board with which to fill them.

Mechanical Pulp

The undertone of the ground wood market during the past week has been decidedly strong and business has been carried on at a fast clip. Spruce pulp still hovers in the neighborhood of $30 to $31 per ton, f. o. b. mill, and a general price advance is expected to hit this market almost any week now. Board and news print mills continue to require large tonnages.

Chemical Pulp

A broad demand has characterized the chemical pulp market in New York circles for the last week to ten days, and this has been accompanied by a gradual but quite perceptible increase in the trend of prices. No. 1 domestic kraft is bringing around 2.75 to 3.00 cents a pound, f. o. b. plant, while soda pulp is holding its own in the neighborhood of 4.00 to 4.25 cents. No. 1 domestic bleached sulphite has frequently been listed at the latter figure, and prospects are for a continuance of the present strong demand, together with a still further boost in prices.

Old Rope and Bagging

Old rope is still moving in usual quantities to mills, although a few have expressed their disinclination to buy any more of the commodity than was absolutely necessary. Sizable lots of old rope are few and far between, the preference of consumers going to the domestic product rather than the imported.

Bagging quotations are now firm to strong as a result of the generally improved demand from all consuming quarters. No. 1 scrap has been moving forward steadily, due to the demand from roofing felt mills, and brokers have been paying around one cent a pound willingly during the past week, f. o. b. cars.

Waste Paper

Mills have let up slightly in their demand for waste paper and this has given waste paper prices a temporary reactionary tendency. In order to insure themselves of adequate supplies of raw materials to tide them over the present boom period, mills have been buying liberally. When the first few dents have been made in their reserve supplies and business still continues strong, there will, undoubtedly, be a turn in the other direction again.

Rags

Manufacturers are continuing to require regular shipments of rags, despite the rumor that there has been a quieting down. Roofing rags are being turned over in excellent volume at prices ranging from 1.30 cents and up for the No. 1 grade. Thirds and blues are still moving well, while the consumption of white rags has been steady but not phenomenal.

Twine

Although a stimulated demand exists in the New York twine market, sufficient impetus has not yet been gained to effect a general upward revision of prices to correspond with the new schedule of raw jute costs due to India's short crop this year. Dealers are reported to have very scant supplies.

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations September 19, 1922:

	BID	ASKED
American Writing Paper Company, pref.	32¼	32¾
International Paper Company, com.	58	58½
International Paper Company, pref., stamped.	78	79½
Union Bag & Paper Corporation	74½	75

Paper

F. o. b. Mill.

Ledgers	All quotations withdrawn
Bonds	
Writings—	
Extra Superfine.	
Superfine	
Tub Sized	
Engine Sized	

News—f. o. b. Mill—		
Rolls, contract	3.75	@ 4.00
Rolls, transit	4.00	@ —
Sheets	4.00	@ —
Side Runs	3.25	@ 3.50

Book, Cased—f. o. b. Mill	
S. & S. C.	All quotations withdrawn
M. F.	
Coated and Enamel	
Lithograph	

Tissues—f. o. b. Mill	
White, No. 1	All quotations withdrawn
Colored	
Anti-Tarnish	
Silver Tissue	
Manila	

Kraft—f. o. b. Mill—		
No. 1 Domestic	7.00	@ 7.50
No. 2 Domestic	5.50	@ 6.25
Imported	6.00	@ 6.25
Screenings	3.00	@ 3.50

Manila—		
No. 1 Jute	8.50	@ 9.00
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.50	@ 5.50
No. 2 Wood	4.00	@ 4.50
Butchers	4.25	@ 4.75

Fiber Papers—		
No. 1 Fiber	6.00	@ 6.25
No. 2 Fiber	5.00	@ 5.25
Common Bogus	2.50	@ —
Card Middles	4.00	@ 5.00

Boards—per ton—		
News	.65	@ —
Straw	—	@ —
Chip	.60	@ —
Binders' Board	.75	@ —
Sgl. Mla. Ll.Chip.	—	@ —
Wood Pulp	—	@ —
Container	—	@ —

Wax Paper—		
Self Sealing White 28 and 30 lb. basis	10.50	@12.00
Waxed Tissue	1.60	@ 1.80

Glassine—	
Bleached, basis 25 lbs.	All quotations withdrawn
Bleached, basis 20 lbs.	

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	32.00	@36.00
No. 1 Domestic	28.00	@32.00

(F. o. b. Pulp Mills.)

Chemical Pulp

(Ex-Dock, Atlantic Ports.)

Sulphite (Imported)—		
Bleached	4.30	@ 4.50
Easy Bleaching	2.85	@ 3.10
No. 1 strong unbleached	2.50	@ 2.75
No. 2 Strong unbleached	2.25	@ 2.50
No. 1 Kraft	2.70	@ 3.00
Sulphate—		
Bleached	3.90	@ 4.00

(F. o. b. Pulp Mill.)

Sulphite (Domestic)—		
Bleached	4.25	@ 4.50
Strong unbl'chd.	2.60	@ 2.80
Easy Bleaching Sulphite	2.70	@ 3.10
News Sulphite	2.50	@ 2.80
Mitscherlich	2.75	@ 3.05
Kraft (Domestic)	2.65	@ 3.00
Soda Bleached	4.00	@ 4.50

Domestic Rags

New

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	11.25	@11.75
New White, No. 2	6.50	@ 7.00
Silesias, No. 1	6.25	@ 6.75
New Unbleached	9.00	@ 9.50
Washables	4.00	@ 4.25
Fancy	5.00	@ 5.50
Cotton—according to Grades—		
Blue Overall	5.50	@ 6.00
New Blue	4.75	@ 5.00
New Black Soft	5.50	@ 6.00
New Light Seconds	2.75	@ 3.00
O. D. Khaki Cuttings	3.75	@ 4.25
Men's Corduroy	2.75	@ 3.00
New Canvas	7.00	@ 7.25
New Black Mixed	2.50	@ 2.75

Old

White, No. 1—		
Repacked	6.50	@ 6.75
Miscellaneous	5.50	@ 6.00
White, No. 2—		
Repacked	3.25	@ 3.50
Miscellaneous	2.75	@ 3.00
St. Soiled White	1.65	@ 1.75
Thirds and Blues—		
Repacked	1.75	@ 1.85
Miscellaneous	1.45	@ 1.55
Black stockings	2.90	@ 3.25
Roofing Rags—		
Cloth Strippings	1.25	@ 1.35
No. 1	1.25	@ 1.35
No. 2	1.20	@ 1.25
No. 3	.85	@ .95
No. 4	.85	@ .95
No. 5A	1.00	@ 1.10

Foreign Rags

New Light Silesias	6.00	nominal
Light Flannelettes	6.75	nominal
Unbl'chd Cottons	7.50	nominal
New White Cuttings	9.50	nominal
New Light Oxfords	6.00	nominal
New Light Prints	4.50	nominal
New Mixed Cuttings	2.00	@ 2.50
New Dark Cuttings	1.90	@ 2.10
No. 1 White Linens	9.00	@11.00
No. 2 White Linens	6.50	nominal
No. 3 White Linens	5.00	nominal
No. 4 White Linens	3.50	nominal
Old Extra Light Prints	2.00	nominal
Ord. Light Prints	1.75	nominal
Med. Light Prints	1.50	nominal
Dutch Blue Cottons	1.85	nominal
German Blue Cottons	1.50	nominal
Ger. Blue Linens	3.50	nominal
Checks and Blues	1.50	nominal
Dark Cottons	1.20	@ 1.30
Shoppery	1.00	@ 1.05
French Blues	1.75	@ 2.00

Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1—		
Foreign	1.00	@ 1.10
Domestic	1.00	@ 1.10
Wool, Tares, light	1.45	@ 1.55
Bright Bagging	1.10	@ 1.25
No. 1 Scrap	1.00	@ 1.15
Sound Bagging	.85	@ .95
Manila Rope—		
Foreign	6.00	@ 6.25
Domestic	6.25	@ 6.50
New Bu. Cut	2.25	@ 2.45
Hessian Jute Threads—		
Foreign	2.25	@ 2.50
Domestic	2.20	@ 2.40
Mixed Strings	.90	@ 1.00

Twines

Cotton—(F. o. b. Mill)		
No. 1	.35	@ .37
No. 2	.31	@ .33
No. 3	.37	@ .29
India, No. 6 basis—		
Light	.20	@ .21
Dark	.19	@ .20
B. C., 18 Basis	.41	@ .42
A. B. Italian, 18 Basis	.51	@ .61
Finished Jute—		
Light, 18 basis	.26	@ .27
Dark, 18 basis	.29	@ .30
Jute Wrapping, 3-6 Ply—		
No. 1	.23	@ .24
No. 2	.21	@ .22
Tube Rope—		
4-ply and larger.	.15	@ .17
Fine Tube Yarn—		
5-ply and larger.	.19	@ .21
4-ply	.20	@ .22
3-ply	.20	@ .22
Unfinished India—		
Basis	.16	@ .17
Paper Makers Twine Balls	.13	@ .15
Box Twine, 2-3 ply	.18	@ .19
Jute Rope	.21	@ .24
Amer. Hemp, 6	.33	@ .35
Sisal Hay Rope—		
No. 1 Basis	.15	@ .17
No. 2 Basis	.13	@ .15
Sisal Lath Yarn—		
No. 1	.14	@ .15
No. 2	.11	@ .13
Manila Rope	.18	@ .19

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	4.00	@ 4.25
Hard, White, No. 2	3.65	@ 3.90
Soft, White No. 1	3.60	@ 3.80
Flat Stock—		
Stitchless	2.15	@ 2.30
Over Issue Mag.	2.60	@ 2.70
Solid Flat Book	2.10	@ 2.25
Crumpled No. 1	1.70	@ 2.00
Solid Book Ledger	3.00	@ 3.25
Ledger Stock	2.25	@ 2.50
New B. B. Chips	.65	@ .70
Manilas—		
New Env. Cut	2.50	@ 2.75
New Cut No. 1	2.00	@ 2.10
Extra No. 1, Old	1.55	@ 1.65
Print	1.10	@ 1.20
Container Board	1.00	@ 1.10
Bogus Wrapper	1.05	@ 1.15
Old Krafts, machine compressed Bales	2.00	@ 2.15
News—		
No. 1 White News	1.80	@ 1.95
Strictly Overissue	1.20	@ 1.30
Strictly Folded	1.10	@ 1.15
No. 1 Mixed Paper	.90	@ .95
Common Paper	.60	@ .65

CHICAGO

[FROM OUR REGULAR CORRESPONDENT]

Paper

F. o. b. Mill

All Rag Bond	All quotations withdrawn	
No. 1 Rag Bond		
No. 2 Rag Bond		
Water Marked Sulphite		
Sulphite Bond		
Sulphite Ledger		
Superfine Writing		
No. 1 Fine Writing		
No. 2 Fine Writing		
No. 3 Fine Writing		
No. 1 M. F. Book		
No. 1 S. & S. C. Book		
Coated Book		
Coated Label		
News—Rolls, mill	3½@	4½
News—Sheets, mill	3¾@	4¾
No. 1 Manila	5½@	6
No. 1 Fiber	5 @	5½
No. 2 Manila	4½@	5
Butchers' Manila	4 @	—
No. 1 Kraft	7 @	7¼
No. 2 Kraft	6 @	6½
Wood Tag Boards	4 @	—
Screenings	2½@	—
Boards, per ton—	All quotations withdrawn	
Plain Chip		
Solid News		
Manila Lined Chip		
Container Line—		
85 Test		
100 Test		

Old Papers

Shavings—		
No. 1 Hard White	4.50	@ 4.75
No. 1 Soft Shav.	3.75	@ 4.00
No. 1 Mixed	2.10	@ 2.20
No. 2 Mixed	1.75	@ 1.90
White Envel. Cuttings	4.50	@ 4.75
Ledgers and Writings	2.65	@ 2.75
Solid Books	2.55	@ 2.65
No. 1 Books, light	2.40	@ 2.50
Blanks	2.00	@ 2.25
Ex. No. 1 Manila	2.40	@ 2.60
Manila Envelope Cuttings	2.40	@ 2.60
No. 1 Manilas	1.75	@ 2.00
Folders News (over issue)	1.40	@ 1.50
Old Newspaper	1.35	@ 1.45
Mixed Papers	1.25	@ 1.50
Straw Clippings	1.25	@ 1.50
Binders Clippings	1.25	@ 1.50
Kraft	2.40	@ 2.60
New Kraft Cuts	2.50	@ 2.75
Roofing Stock, f. o. b. Chicago, Net Cash—		
No. 1	33.00	@ —
No. 2	31.00	@ —
No. 3	29.00	@ —
No. 4	29.00	@ —

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT]

Paper

Bonds	.10	@ .60
Ledgers	.15	@ .40
Writings—		
Superfine	.15	@ .20
Extra fine	.12	@ .22
Fine	.20	@ .30
Fine, No. 2	.20	@ .25
Fine, No. 3	.15	@ .20
Book, M. F.	.06	@ .09
Book, S. S. & C.	.08	@ .15
Book, Coated	.08	@ .15
Coated Lithograph	.10	@ .15
Label	.08	@ .15
News	.05	@ .07
No. 1 Jute Manila	.12	@ .13
Manila Sul., No. 1	.08	@ .08½
Manila No. 2	.07½	@ .08
No. 2 Kraft	—	@ .08½
No. 1 Kraft	—	@ .09½
Common Bogus	.02½	@ .03
Straw Board	All quotations withdrawn	
News Board		
Chip Board		
Wood Pulp Board (Carload Lots)		
Binder Boards—		
Per ton		
Carload lots		
Tarred Felts—		
Regular	48.00	@50.00
Slaters	54.00	@56.00
Best Tarred, 1-ply (per roll)	1.35	@ 1.50
Best Tarred, 2-ply (per roll)	1.00	@ 1.15
Best Tarred, 3-ply	1.50	@ 1.65

Bagging

F. o. b. Phila.

Gunny No. 1—		
Foreign	.75	@ —
Domestic	.70	@ —
Manila Rope	4.00	@ 4.50
Sisal Rope	.75	@ .80
Mixed Rope	.75	@ .80
Scrap Burlaps	1.00	@ 1.25
Wool Tares, heavy	2.50	@ 2.75
Mixed Strings	.75	@ .80
No. 1, New Lt. Burlap	.75	@ .80
New Burlap Cuttings	1.75	@ 2.10

Old Papers

F. o. b. Phila.

Shavings—		
No. 1, Hard White	4.00	@ 4.25
No. 2, Hard White	3.50	@ 3.75
No. 1 Soft White	3.60	@ 3.75
No. 2 Soft White	2.00	@ 2.25
No. 1 Mixed	1.50	@ 1.75
No. 2 Mixed	1.00	@ 1.25

(Continued on page 66)

XUM

Imports and Exports of Paper and Paper Stock

(*Continued from page 60*)

Irving National Bank, by same, Helsingfors, 679 bls., 101 tons.
Lagerloef Trading Co., by same, Kotka, 310 bls., 50 tons.
Lagerloef Trading Co., by same, 1,391 bls. wood pulp boards, 129 tons.

WOOD FLOUR

B. L. Soberskir, Stavangerfjord, Kristiania, 3,362 bgs.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 16, 1922

Wood Pulp Trading Co., Inc., Mornega, Christiania, 450 bls. wood pulp.
A. J. Pagel & Co., Inc., Winnebago, Gothenburg, 6,000 bls. wood pulp.
Castle, Gottheil & Overton, Burgerdyk, Rotterdam, 380 bls. wood pulp.
Castle, Gottheil & Overton, Steigerwald, Hamburg, 100 bls. rags.
Castle, Gottheil & Overton, Michigan, Hamburg, 531 bls. rags.
E. J. Keller Co., Inc., Naperian, Antwerp, 141 bls. rags.
E. J. Keller Co., Inc., Morristown, Hamburg, 679 bls. rags.
E. J. Keller Co., Inc., Steigerwald, Hamburg, 344 bls. rags.
E. J. Keller Co., Inc., Manhattan, Bremen, 830 bls. rags.
Equitable Trust Co., Menominee, London, 307 bls. paper stock.
Corn Exchange National Bank, by same, 260 bls. paper stock.
E. J. Keller Co., Inc., Edgehill, Rotterdam, 184 bls. rags.
D. J. Murphy, by same, 140 bls. rags.
E. Butterworth & Co., by same, 102 bls. old pickers.
Katzenstein & Keene, Inc., Burgerdyk, Rotterdam, 152 bls. rags.
Katzenstein, Breiz Izel, Havre, 687 bls. rags.
Katzenstein & Keene, Inc., Inmeko, Antwerp, 146 bls. old rope.

BOSTON IMPORTS

WEEK ENDING SEPTEMBER 16, 1922

Irving National Bank, Belvedere, Helsingfors, 400 bls. wood pulp, 50 tons.
Lagerloef Trading Co., by same, 680 bls. wood pulp, 102 tons.
Lagerloef Trading Co., by same, Kotka, 610 bls. wood pulp, 101 tons.
Irving National Bank, by same, 3,399 bls. wood pulp, 575 tons.
M. Gottesman & Co., Inc., Narnega, Christiania, 1,500 bls. wood pulp.
Bulkley, Dunton & Co., Africanic, Stugesund, 2,000 bls. wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING SEPTEMBER 16, 1922

Certainteed Products Corp., Nacata, Antwerp, 213 bls. rags.
M. Gottesman & Co., Inc., Trollehom, Stockholm, 410 reels news print.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 16, 1922

Bulkley, Dunton & Co., Sagoland, Iggesund, 12,000 bls. wood pulp.
Bulkley, Dunton & Co., Carlsholm, Iggesund, 6,200 bls. wood pulp.
R. F. Hammond, Natirar, Kristiania, 2,250 bls. wood pulp, 450 tons.
Brown Bros. & Co., Alarich, Skutskar, 500 bls. wood pulp.
A. J. Pagel & Co., Inc., by same, 3,750 bls. wood pulp.
American Wood Pulp Corp., by same, 2,000 bls. wood pulp.
American Wood Pulp Corp., Winnebago, Gothenburg, 1,200 bls. wood pulp.
Guaranty Trust Co., by same, 5,000 bls. wood pulp.
A. J. Pagel & Co., Inc., by same, 4,050 bls. wood pulp.
Johanesson, Wales & Spaire, Inc., by same, Gothenburg, 1,524 bls. wood pulp.
Scandinavian-American Trading Co., by same, 508 bls. wood pulp.
Wood Pulp Trading Co., Krator, Svartvik, 3,000 bls. wood pulp.
Wood Pulp Trading Co., Kratos, Utanajo, 1,500 bls. wood pulp.
E. J. Keller Co., Inc., Blydmdyk, Rotterdam, 484 bls. rags.
Katzenstein & Keene, Inc., Burgerdyk, 40 bls. rags.
Katzenstein & Keene, Inc., Manchester Post, Glasgow, 281 bls. rags.
Katzenstein & Keene, Inc., Manchester Importer, Liverpool, 58 bls. new cuttings.

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., September 20, 1922.—The purchasing officer of the Government Printing Office has received the following bids:

40,000 Lbs. 24 x 36—80 H. F. sulphite manila paper in 18" rolls: Dobler & Mudge, $.083 per lb.; Maurice O'Meara Company, $.0696; Carter Rice & Co., $.0795; R. P. Andrews Paper Company, $.0674; Samuel S. Alcorn, $.0635; Reese & Reese, $.06772; D. S. Walton & Co.; $.06825; Old Dominion Paper Company, $.077.

320,000 Lbs. 24 x 36—32 news print paper in 48" rolls: Dobler & Mudge, at $.05 per lb.; International Paper Company, $.0426; The Whitaker Paper Company, $.0488; Maurice O'Meara Company, $.0408; Interstate Pulp and Paper Company, $.043.

4,000 Lbs. 24 x 36—70 rope manila paper, 11½" rolls: R. P. Andrews Paper Company, $.1035 per lb.; Dobler & Mudge, $.1194.

300,000 Lbs. 25 x 38—36 white machine finish printing paper, 19 and 21" rolls: Dobler & Mudge, at $.0775 per lb.; International Paper Company, $.06735; Old Dominion Paper Company, $.08299; R. P. Andrews Paper Company, $.0674; Bryant Paper Company, $.075.

1,275 Lbs. 17 x 28—25½ green glazed bond paper: Ætna Paper Company, at $.1736 per lb., and Old Dominion Paper Company at $.1749.

1,500 10⅝ x 8⅛ x 2½" Paper Boxes: National Metal Edge Box Company, at $27.00 per M.; Lindley Box and Paper Company, $43.80; Climax Manufacturing Company, $27.60; Baltimore Paper Box Company, $50.00, and Columbia Specialty Paper Box Company.

50,000 Lbs. 26 x 38—No. 50 chip board: Mathers-Lamm Paper Company at $54.95 per ton; Reese & Reese, $57.50; Whitaker Paper Co., $53.20; C. L. LaBoiteaux Company, $59.30; United Paper Board Company, $60.00; R. P. Andrews Paper Company, $56.00; Dobler & Mudge, $60.00; B. F. Bond Paper Company, $54.40; George A. Jaeger, $66.00.

The Whitaker Paper Company has been awarded the contract by the Purchasing Officer of the Government Printing Office for furnishing 50,000 pounds (50,000 sheets) of 26 x 38—No. 50 chip board at $.0266 per pound, bids for which were opened on September 13.

The purchasing officer of the Government Printing Office will receive bids on September 29 for 1,000,000 lbs. of U. S. postal card cream Bristol board in 44½" rolls, basis 22½ x 28½—104.

The purchasing officer will open bids on September 25 for the following:

3,100 lbs. (50 reams) 23 x 36—62 No. 28 White Ledger Paper and 36,000 lbs. No. 13 white writing paper H. M. F., in 18" rolls.

The Maurice O'Meara Paper Company has been awarded the contract for furnishing 320,000 pounds of news print paper in 48" rolls at $.0408 per pound, bids for which were opened on September 11.

To Stimulate Sales of New U. S. Envelopes

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., September 20, 1922.—Salesmanship as a new function of postal clerks is being advocated by Assistant Postmaster General Glover in a notice to postmasters urging that the attention of the public be called to the extra-quality stamped envelopes which have been on sale in the various post offices since August 1.

The superior quality envelopes are not in as much demand as was anticipated and Mr. Glover believes it is because the public has not been acquainted with the better grade designed to please the most fastidious letter writer.

Therefore, the postmasters are directed to try a little "selling talk" on prospective envelope purchasers bringing out the good points in the new envelopes which has a bursting strength of 35 as compared with 25 for the standard quality, a weight of 28 as compared with 25, and has added strength and superior writing surface.

XUM

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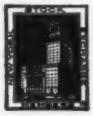

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BLEACHED SULPHITE

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EASY BLEACHING SULPHITE

STRONG UNBLEACHED SULPHITE

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EXTRA STRONG KRAFT; BLEACHED AND BLEACHABLE SULPHATE

"Edsvalla" 50% MOIST "Dejefors" DRY
WHITE SPRUCE—GROUND WOOD

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Whalen Sulphite Pulps

Made from the SITKA SPRUCE of BRITISH COLUMBIA. Noted for Fibre, Color and strength.

SNOWHITE	EASY BLEACHING
BLEACHED	SWAN
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Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
TUESDAY, SEPTEMBER 5, 1922.

ALUM.—Still exhibiting a tendency to stiffen up, alum has become more and more scarce during the past week. Prices are practically unchanged, the current quotations being $3.40 to $3.60 per cwt. for the ground and $3.50 to $3.75 for the powdered.

BLEACHING POWDER.—Bleach continues to sell at $1.70 and $1.75 a hundred for new business on large drum quantities at the works. Plants are seriously hampered by the protracted lack of coal as well as the high freight rates.

BLANC FIXE.—This commodity is now moving toward consuming channels in regular quantities, blanc fixe pulp being quoted at $40 to $50 a ton and dry blanc fixe at $75 to $85.

CAUSTIC SODA.—Producers of caustic soda have been hit probably harder than those manufacturing other chemicals by the shortage of coal and raw materials. Quotations for 60 per cent basic caustic, however, continue to hover in the vicinity of 2.70 cents a pound, works.

CHINA CLAY.—Clay prices are now governed by a number of situations arising from the coal shortage in this country, the materially increased transatlantic freight rates and the excessive demand on the part of American consumers. More ships are now available for the transport of English clays, but prices remain at the higher level of $16 to $23 per ton for the imported, $8 to $11 for domestic washed and $6 to $8.50 for domestic unwashed.

CASEIN.—With the announcement of a revision in the tariff bill, lowering the proposed duty of 4.00 cents a pound on casein to 2.50 cents, the price tone of the market has eased off somewhat, current quotations ranging from 16.00 to 19.00 cents a pound. The approach of winter and consequent decline in the domestic production of this commodity will be offset by the greater Argentinian output with the coming of the summer season in that country.

LIQUID CHLORINE.—The demand for chlorine is stiffening up considerably but there is still a wide variation of 4.00 to 7.00 cents a pound in the quoted prices.

ROSIN.—Grades E, F and G have been in regular demand during the past week, the New York price per barrel of 280 pounds being in the neighborhood of $6.25 per barrel, freight on board.

SALTCAKE.—Active participation in the saltcake market by every factor of the consuming trade has had the effect of draining the available supplies and boosting prices sky-high. It is now quoted at $22 and more per ton, works, while acid cake ranges around $25 and $26.

SATIN WHITE.—Dealers in this commodity report that business is fairly active, the quoted price, however, holding at 1.50 to 2.00 cents a pound.

SODA ASH.—Moving into consuming channels with considerable briskness, soda ash is still adhering rigidly to the annual price schedule, quote prices remaining at 1.51 cents a pound in barrel quantities. Bag lots are listed at 1.30 cents and bulk at 1.20.

SULPHUR.—Producers of brimstone state that the increased volume of business which is accruing to paper manufacturers with the coming of fall and winter is serving to decrease their ground supplies in the south. The price still holds firm at $18 to $20 per ton.

STARCH.—Anticipating a gradual easing up in the price tone during the next six weeks to two months as a logical result of this year's boom corn crop, starch producers continue to quote 2.47 to 2.75 cents a pound respectively for bag and barrel quantities of powdered starch.

SULPHATE OF ALUMINA.—Eastern producers are still literally embargoed from this market, and higher coal costs are causing prices to advance considerably. Commercial sulphate of alumina is quoted at $1.50 to $1.75 and the iron free is listed at $2.25 to $2.50 per hundred pounds.

Market Quotations

(*Continued from page 63*)

Solid Ledger Stock.	2.25	@	2.50
Writing Paper.....	.02	@	2.25
No. 1 Books, heavy.	1.80	@	1.90
No. 2 Books, light.	1.40	@	1.50
No. 1 New Manila.	2.75	@	3.00
No. 1 Old Manila..	1.50	@	1.75
Container Manila...	1.20	@	1.25
Old Kraft.....	2.25	@	2.50
Overissue News....	1.25	@	1.30
Old Newspaper....	1.15	@	1.20
No. 1 Mixed Paper.	.01	@	1.10
Common Paper....	.75	@	.80
Straw Board, Chip.	.75	@	.80
Binders' Bd. Chip..	.75	@	.80

Domestic Rags—New.
Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.10	@	.10¼
New White, No. 2	.05½	@	.06½
Silesias, No. 1...	.05½	@	.06
New unbleached..	.09	@	.09½
Washables	.03½	@	.03¾
Fancy	.04¼	@	.04¼
Cottons—according to grades—			
Blue Overall.....	.04½	@	.05¾
New Blue.....	.02	@	.02¼
New Black Soft.	.03	@	.03¼
New Light Sections	.02	@	.02¼
Khaki Cuttings...	.02¾	@	.03½
Corduroy	.02	@	.02½
New Canvas.....	.07	@	.07½
New Black Mixed	2.75	@	3.00
Old White, No. 1—			
Repacked	.06	@	.06½
Miscellaneous ...	.04½	@	.04¾
White, No. 2—			
Repacked	.03	@	.03½
Miscellaneous ...	.02¾	@	.02⅞
Thirds and Blues—			
Repacked	1.65	@	1.80
Miscellaneous ...	1.40	@	1.55
Black Stockings....	1.75	@	2.25
Roofing Stock—			
No. 1.....	1.00	@	1.10
No. 2.....	.90	@	1.00
No. 3.....	.80	@	.90
No. 4.....	.80	@	.90
No. 5A.....	nominal		
B.....	nominal		
C.....	nominal		

BOSTON

[FROM OUR REGULAR CORRESPONDENT]

Paper

Bonds	.06¾	@	.65
Ledgers	.07½	@	.55
Writings	.07½	@	.42
Superfine	.15	@	.22½
Fine	.15	@	.18
Books, S. & S. C...	.07	@	.12
Books, M. F.....	.05¾	@	.10
Books, coated.....	.08	@	.16
Label	.08½	@	.13
News, sheets	4.00	@	4.25
News, rolls.....	4.00	@	4.25
Manilas—			
No. 1 Manila...	$5.50	@	7.00
No. 1 Fiber.....	.07½	@	
No. 1 Jute.....	10.50	@	12.00
Kraft Wrapping....	.06½	@	.12
Common Bogus....	3.00	@	3.50

Boards

(Per Ton Destination)

Chip	$50.00	@	55.00
News, Vat Lined...	51.50	@	55.00
Wood, Vat Lined..	60.00	@	65.00
Filled News Board.	52.50	@	55.00
Solid News Board..	60.00	@	65.00
S. Manilla Chip....	62.50	@	67.50
Pat. Coated.....	70.00	@	85.00

Old Papers

Shavings—			
No. 1 Hard White	4.00	@	4.25
No. 1 Soft White	3.30	@	3.45
No. 1 Mixed....	1.50	@	1.75
Ledgers & Writings	1.75	@	2.00
Solid Books.....	2.00	@	2.25
Blanks	1.70	@	1.80
No. 2 Light Books.	1.50	@	1.80
Folded News, overissues	19.00	@	20.00
Gunny Bagging ...	.85	@	.90
Manila Rope.....	5.75	@	6.00
Common Paper....	.80	@	.90
Old News.....	.80	@	.90
Old Kraft.....	1.75	@	2.00

TORONTO

[FROM OUR REGULAR CORRESPONDENT]

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11	@	.12½
Light tinted.....	.12	@	.13½
Dark tinted.....	.13½	@	.15
Ledgers (sulphite).	—	@	.13
Writing	.09½	@	.12
News, f. o. b. Mills—			
Rolls (carloads)..	3.50	@	
Sheets (carloads).	—	@	4.25
Sheets (2 tons or over)	—	@	4.50
Book—			
No. 1 M. F. (carloads)	8.50	@	—
No. 2 M. F. (carloads)	7.50	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	9.00	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 1 Coated and litho.	14.00	@	—
No. 2 Coated and litho.	13.00	@	—
No. 3 Coated and litho.	12.25	@	—
Coated and litho., colored	14.25	@	—
Wrapping—			
Grey	4.50	@	—
White Wrap	5.00	@	—
"B" Manila	5.50	@	—
No. 1 Manila ..	6.75	@	—
Fiber	6.75	@	—
Kraft, M. F.	8.00	@	—
M. G.	8.15	@	—

Pulp

(F. o. b. Mill)

Ground wood.....	$28.00	@	35.00
Sulphite easy bleaching	60.00	@	67.50
Sulphite news grade.	50.00	@	55.00
Sulphite, bleached..	85.00	@	95.00
Sulphate	70.00	@	—

Old Waste Papers

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut..	3.75	@	—
Soft White Book Shavings	3.75	@	—
White Bl'k News	2.00	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	2.25	@	—
Light and Crumpled Book Stock.	2.10	@	—
Ledgers and Writings	2.50	@	—
Solid Ledgers...	1.95	@	—
Manilas—			
New Manila Cut.	2.00	@	—
Printed Manilas..	1.55	@	—
Kraft	2.50	@	—
News and Scrap—			
Strictly Overissue	.90	@	—
Folded News....	.80	@	—
No. 1 Mixed Papers	.70	@	—
Domestic Rags—			
Price to mills, f. o. b. Toronto.			Per lb.
No. 1 White shirt cuttings	.11¼	@	.11½
No. 2 White shirt cuttings	.06½	@	—
Fancy shirt cuttings	.06	@	.06¼
No. 1 Old whites	.04	@	—
Thirds and blues	.02	@	.02½
			Per cwt.
Black stockings..	2.50	@	—
Roofing stock:			
No. 1.....	1.50	@	—
No. 2.....	1.40	@	—
Roofing stock:			
Manila rope.....	.06	@	.06¼
No. 2.....	.01½	@	—
Gunny bagging....	1.00	@	1.25

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When answering advertisements, please address the Box Number given in ad.

Answers can be forwarded care Paper Trade Journal, and will be promptly forwarded without extra charge. All should be sent to the New York office, 10 East 39th street. And all should be addressed as the advertisement directs in every case and not simply to the paper.

All classified ads for the current issue must be in hand not later than Monday preceding date of publication.

HELP WANTED

WANTED—Board Machine Tender, eighty cents per hour and steady work year round. Only first class man wanted. Address, Box 5422, care Paper Trade Journal. S-28

WANTED—Experienced Printing Paper Salesman for New England territory. Must be capable of earning good salary. State your full experience in first letter. Address, Box 5423, care Paper Trade Journal. O-12

WANTED—Two Calender Men. Wages 55 cents per hour. Eight hour day. None but expert workmen need apply. Address, Box 5424, care Paper Trade Journal. S-28

WANTED—A Competent Millwright to take care of all repairs in connection with a two Machine, Chip Board Mill with production of 60 tons 24 hours. Address, Box 5425, care Paper Trade Journal. O-5

WANTED—Boss Machine Tender. Must be capable, thoroughly experienced, give results and willing to prove himself on two Cylinder Machines making Bristol Boards. Good opportunity with chance of advancement. State experience, send copies of references in first reply. Address, Box 5426, care Paper Trade Journal. O-26

WANTED—Two Good Paper Mill Millwrights. Must be familiar with wood room. Good town to live. Cheap rents. Good working conditions. Open shop. Steady men wanted. Address, Box 5427, care Paper Trade Journal. S-28

PAPER SALESMAN WANTED—One who desires to sell on commission for House carrying general line of Papers and card board. Address, Box 5428, care Paper Trade Journal. S-28

SALESMAN WANTED—Can use services of experienced Wrapping, Board, Twine and Specialty Salesman on commission or salary basis for New York City, New Jersey and Connecticut. Communication confidential. Give complete details. Address, Box 5429, care Paper Trade Journal. S-28

WANTED—Superintendent for two Machine Mill making Nine Point Straw for Corrugating. One familiar with water wheels and steam engines preferred. State age, experience on straw and salary required in first letter. Address, The Thompson & Norris Co., Brookville, Indiana. S-28

WANTED—A Machine Tender in small Bogus Mill in Maryland. Two cylinder machine. Steady work to a steady man. Address, Box 5435, care Paper Trade Journal. S-21

HELP WANTED

WANTED—Man familiar with Sizings and Chemical Products of interest to Paper Manufacturers, to take charge of manufacturing; must be able to handle men. Good opportunity for the right man. Write education, and previous experience. Address, Box 5436, care Paper Trade Journal. S-21

WANTED—Experienced Salesman on Toilet Paper and Paper Towels for New England Territory on commission basis. Address, Box 5437, care Paper Trade Journal. S-28

WANTED — Experienced Operators for Cameron Rewinder on Glassine, Greaseproof and Light Weight Specialties; also first class Machine Tender, Back Tender and Beaterman. Steady work, good pay. Address, Box 5438, care Paper Trade Journal. S-21

WANTED—Night Superintendent, Mill middle west, manufacturing converted sulphite. Must be good, sober, industrious worker. Must understand washing, bleaching and general making of stock. One who can get good production. Married man preferred. References first letter. Address, Box 5401, care Paper Trade Journal. S-21

WANTED—Back tenders. Experienced on roofing machines. Mill in Eastern city. Good wages. Steady work. Address, Box 5402, care Paper Trade Journal. S-21

WANTED—Competent Board Mill Superintendent thoroughly capable repairing mill damaged by fire and operating. Attractive proposition to right man. Mill located in South. Address, Box 5403, care Paper Trade Journal. S-21

WANTED—Beater engineer, back tender cutterman and trimmerman for book and railroad writing mill. Give references in replying. Address, Box 5391, care Paper Trade Journal. S-21

SITUATIONS WANTED

BEATERMAN would like to make a change. Have had experience on light weight tissue, craft, manilla, bond and news. Good on colors. Steady and sober. 49 years old and married. Would like to connect with a mill that would run steady. Will go anywhere. Address, Box 5430, care Paper Trade Journal. S-21

BOSS FINISHER residing in vicinity of New York City is open for engagement in Coating Mill making Book, Lithographic, Glazed, Embossed Fancy Papers and Coated Specialty. Address, Box 5431, care Paper Trade Jourani. O-12

GENERAL SUPERINTENDENT or Manager with several years' experience in modern mills manufacturing News, Book, Hangings and Specialties, desires connections with good organizer and producer. New organization. Would consider foreign country. Address, Box 5432, care Paper Trade Journal.

YOUNG MAN, 24, at present employed wishes to make change. Desirous of connecting with reliable concern, where there is possibility for good future. Have worked in capacity as salesman, office man and have had five years of mill experience. Address, Box 5367, care Paper Trade Journal. tf

ASSISTANT TO GENERAL MANAGER or President as Plant Manager. Wide experience on rope paper and bags. Capable taking entire charge as executive. Age, 45. Desirable connection wanted rather than immediate large salary. Address, Box 5419, care Paper Trade Journal. S-21

SITUATIONS WANTED

MECHANICAL ENGINEER with several years' practical experience as superintendent of ground wood, sulphite and news print mills, would like to make change. Address, Box 5406, care Paper Trade Journal. S-28

PAPER AND PULP MAN: Open for engagement. Extensive experience. Practical knowledge purchasing, manufacturing and selling. Specialty increasing profits. Highest references. Address, Box 5407, care Paper Trade Journal. S-28

SUPERINTENDENT and technical man with nine years' experience in paper making and laboratory research desires opportunity to learn all phases of office administration in up-to-date paper mill. Nominal salary required. Address, Box 5408, care Paper Trade Journal. tf

SUPERINTENDENT: Now employed desires to make change. Well up on all grades of Board. Can handle help and get production. Can handle own repairs and construction. Address, Box 5409, care Paper Trade Journal. O-12

MASTER MECHANIC with a large experience in construction, reconstruction and efficiency, desires to make change. Address, Box 5383, care Paper Trade Journal. tf

SUPERINTENDENT of ability open for position. Expert on colors, familiar with all grades of board. Understands plant thoroughly. Is a good executive and can get results. Address, Box 5384, care Paper Trade Journal. S-28

WANTED: By a New York Manager and Representative of an out of town Manufacturer of Toilet Paper and Paper Towels, similar connection with reputable manufacturer. Have been in the line over 20 years, over 15 years of which I have spent with my concern. Address, Box 5114, care Paper Trade Journal. S-21

PRACTICAL PAPER MAKER desires a position with a board or specialty mill. Having had experience in both cylinder and fourdrinier mills in all departments. Have been doing engineering work in different mills for past four years. Experienced in construction and mechanical details. Address, Box 5233, care Paper Trade Journal. tf

SULPHITE SUPERINTENDENT, 20 years' practical and technical training, wishes to get in communication with Managers of Mills who want the best and are not getting it. Address, Box 5353, care Paper Trade Journal. O-5

MECHANICAL ENGINEER; 12 years' experience with thorough knowledge of power plant and engineering. Will submit record for investigation to executive requiring reduction in power costs and coal consumption. Address, Box 5400, care Paper Trade Journal. S-28

MILL MAN seeking new connection. Fifteen years' experience manufacturing wrapping paper, bag paper, news specialties, sulphite and ground wood. Also sales experience, cost accounting and purchasing. Good record in executive positions. Now employed. Address, Box 5411, care Paper Trade Journal. S-21

SALESMANAGER with 15 years' experience in merchandising and handling of salesmen, desires connection with high grade Reputable paper mill. Address, Box 5413, care Paper Trade Journal. S-21

SALESMANAGER AND BUSINESS EXECUTIVE: 15 years' experience in practically all lines of paper, particularly specialties, 12 years with one concern. Experience in administration, buying, selling, advertising and general management. Christian, 33 years old. Open for a permanent connection where there is a future for the right man. Address, Box 5385, care Paper Trade Journal. S-21

SITUATIONS WANTED

SALESMAN—Specialist on Coated Lithographic Papers and Boards; also Offset and Printing Papers, desires to connect with mill or dealers having mill connections. Can produce good business. Address, Box 5260, care Paper Trade Journal. S-28

COST ACCOUNTANT and office manager with sound paper experience and first class references seeks responsible position. Address, E. J. B., P. O. Box 760, Cincinnati, Ohio.

SUPERINTENDENT wants position. Can make all grades of box board, and all kinds of wrapping paper, Bogus Mill, can bring an order for one hundred tons a month. Address, Box 5412, care Paper Trade Journal.

MECHANICAL ENGINEER and Master Mechanic, 18 years' experience in Pulp and Paper Mill Construction. Repairs. Wants Position. Expert in hydraulic, steam and electric power. Address, Box 5410, care Paper Trade Journal.

BOSS FINISHER whom previous managers and superintendents have stated "was the best finishing foreman ever employed by them." Experienced on cutters, calendars and shipping. Best references. Address, Box 5374, care Paper Trade Journal.

WOOD PULP AND PAPER MILL Supplies man with about 10 years' experience in selling and purchasing these materials desires connection with progressive firm. A-1 references. Address, Box 5255, care Paper Trade Journal.

WANTED—Position as Machine Tender on Harper and Edwards attachment Cylinder Tissue Machine. Heavy weight waxing paper on Harper. Address, Box 5398, care Paper Trade Journal.

FOR SALE

FOR SALE—One "Sheridan," new model, 36-inch Guillotine Automatic Paper Cutter, belt driven, with one extra knife and fifteen cutter knife sticks. Address, Box 5433, care Paper Trade Journal. O-12

FOR SALE: 16—7 Column Steel Chases. 1 Book Bundling Press. 7 Rolls each 50½" and 33½" Great Northern Newsprint. Also quantity 18 x 23 matrix and tissue paper. Address, Box 5420, care Paper Trade Journal. S-21

FOR SALE—6 Farnum Drives. Complete Triple-Deck frames for 44 Dryers. Will arrange terms to suit. Chesapeake Paper Board Co., Baltimore, Maryland. tf

MISCELLANEOUS

WANTED — One Nash Hytor Turbine Vacuum Pump, Number four or number six. Write Mill Department. Rose Lithographic Corporation, 55 33rd Street, Brooklyn, N. Y. O-5

CYLINDER MOULDS WANTED—Either 36 or 30 inches diameter and anywhere from 80 to 88 inches face. Price must be reasonable. Address, H. O. Ruby, York, Pa. S-28

ADVERTISER wishes to correspond with party owning small Paper Mill with Fourdrinier Machine about 76 inches wide, to manufacture specialty realizing large profits. Further particulars. Address, Box 5414, care Paper Trade Journal. S-28

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REAM CUTTERS—One 48" Acme, one 45" Holyoke Seybold.
SUPER CALENDERS—One 52" Holyoke, one 45", one 42", one 36".
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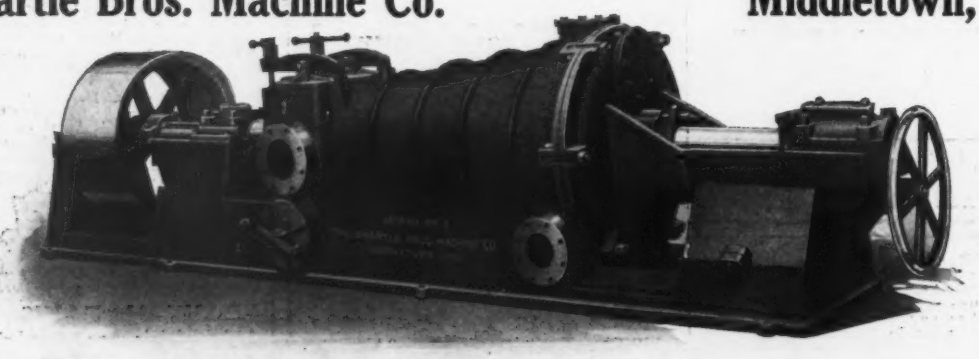

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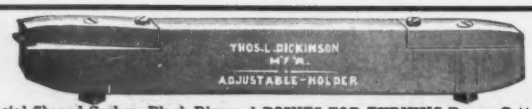

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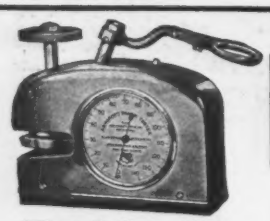

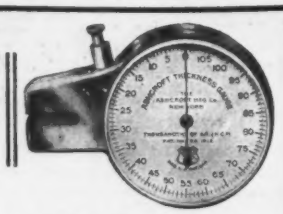

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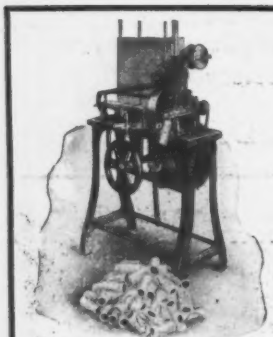

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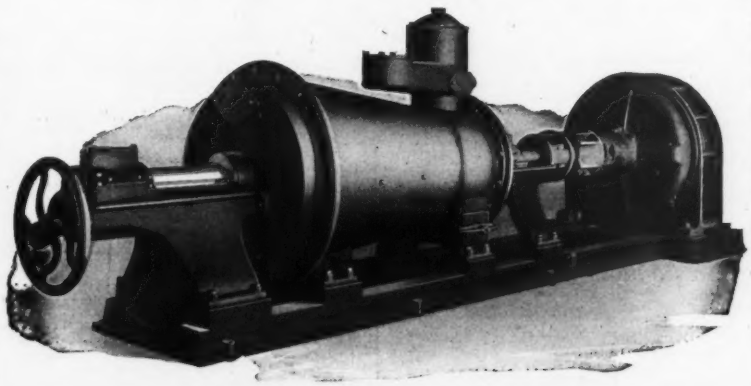

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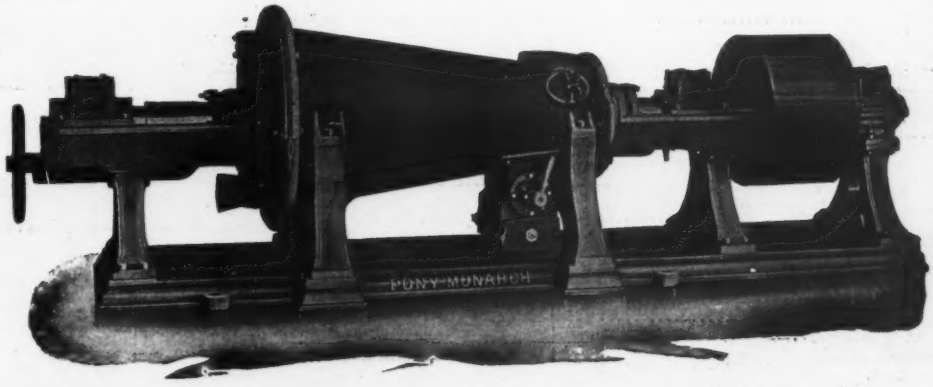

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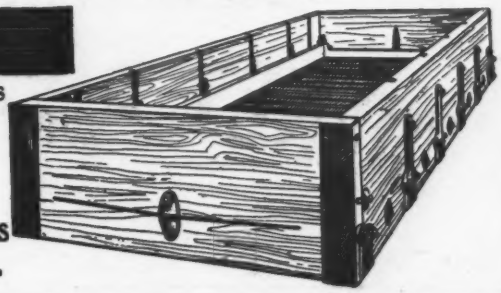

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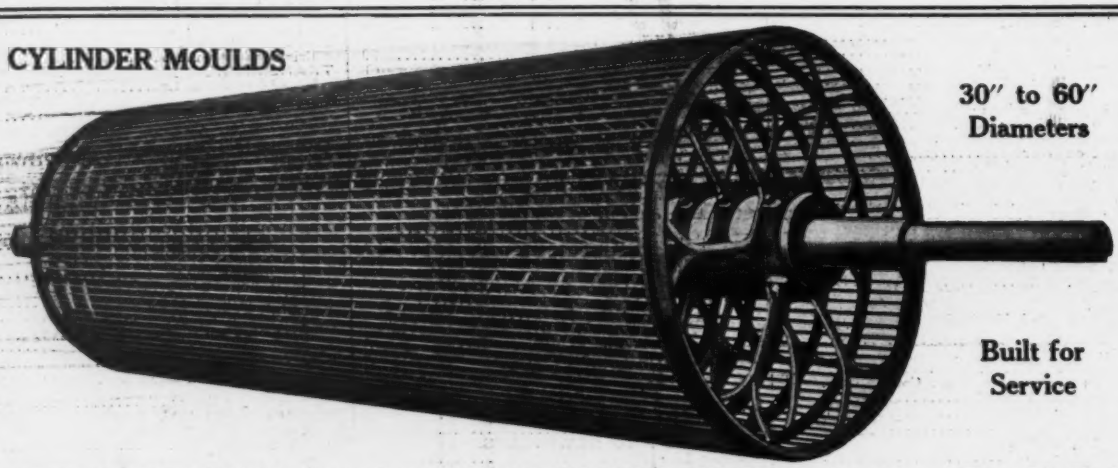

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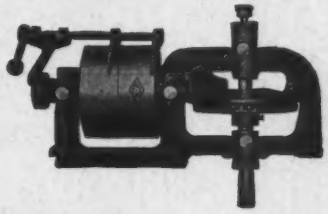

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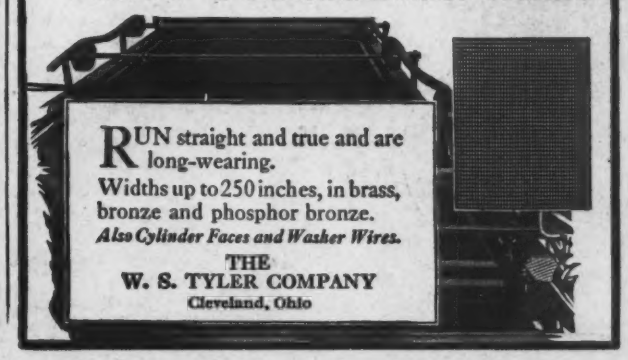

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